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Young students' attitudes toward languages

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CHAPTER 1. GENERAL INTRODUCTION

This chapter introduces the concept of "attitudes," and reviews past studies on attitudes in world language education programs for languages other than English. Also included in this chapter is a description of the two educational settings in which the present study was carried out and the research hypotheses that guided this study.

1. Introduction

Scholarly research focused on "attitudes" began less than a century ago. Initially, an attitude was the term used to describe a physical posture or pose that a person adopted when he or she had their portrait painted (Baker, 1992). During the second decade of the twentieth century, researchers and theorists started to realize, for the first time, that an attitude was related to a mental state, rather than physical posture. Behaviorists from that time were inclined to believe that an attitude could not be measured (Reid, 2006). Thurstone (1929), however, published an article claiming that an attitude, or several attitudes, could be measured, and, shortly, Likert (1932) suggested a method for actually doing so. From that point on, several researchers from different academic disciplines have studied attitudes. Initially, these studies were restricted only to the discipline of social psychology and later the idea spread to other disciplines, such as education.

In the realm of education, studies of attitudes were mostly concerned with student attitudes toward school, school subjects, teachers, and other students. Among the studies of school subjects, students' attitudes toward learning a foreign language were explored by researchers such as Baker (1992), and Gardner and Lambert (1972). These researchers

presented the most innovative and ground-breaking findings concerning students' attitudes toward second languages. Baker researched students' attitudes in bilingual education, and Gardner studied students' attitudes in general foreign language education. Gardner and Lambert began their studies in the 1950's. They created a battery of questions to measure students' attitudes toward languages, and included two new concepts related to attitudes: instrumental attitudes and integrative attitudes. Instrumental attitudes are related to the desire to learn a language for personal interest, integrative attitudes are related to the desire to be included in, and function in, a community (Gardner, 1985). Later on, Baker (1992) through a causal model, tested whether students' attitudes are affected by more than one factor at a time.

In this research study, the attitudes of English- and Spanish-speaking students from three Midwest states in the U.S., who were enrolled in second, and world language education programs in the early grades of elementary school (K-2) were evaluated and compared with the attitudes of students at the same grade levels enrolled in English-only programs in which no world languages were taught. One of the groups of young students was participating in a Spanish two-way immersion program and their attitudes were compared with the attitudes of students from the same school district in a similar comparative school with an English-only program. The other group of students was participating in a Chinese world language program. Their attitudes were compared with students at the same grade levels (K-2) in similar schools within the same school districts. In these comparative schools, however, there were no world language programs.

The next section reviews definitions and past studies on attitudes.

2. Theoretical Framework

2.1. Attitude

Derived from the Latin word “aptitude” and the Italian “atto” (Latin=actus or English= act) the word “attitude” was considered an abstract mental concept less than a century ago. Previously, it was only considered as something physical and was used to describe the pose people took for a portrait (Baker, 1992). From a psychological point of view, attitude was first defined as a mental state of readiness to respond to something based on experiences and influencing posterior behavior toward a specific object (Allport, 1935).

In second language acquisition, Gardner and Lambert (1972) identified two main roles of attitudes: 1. Instrumental attitudes are related with the desire to receive social-status recognition or profitable benefits, and 2. Integrative attitudes are related to the desire to be integrated into another language community. These roles describe the position of students with respect to their language learning situation. Instrumental attitudes are when the student is learning the language for personal interest, and integrative attitudes are when the student is learning a language with the desire to be integrated into a specific community that speaks that language. Students learning a second language may report both instrumental and integrative attitudes in response to instruments measuring these attitudes (Gardner, 1985).

As defined by Shohamy and Donitsa-Schmidt (1998), language reflects societal realities such as social interactions, politics, and economics. In addition, language is one of the most important means of supporting the interaction and communication between people

from the same or different language backgrounds. Language helps bring communities together and, therefore, plays a critical role in society.

Because of the critical role of language in society, the need to acquire more than one language is important in an increasingly diverse multilingual society. The history of the U.S. is remarkable in the diversity of languages other than English with which students have entered classrooms every year, and this situation is now more notorious than ever before (Nieto, 2010). The U.S. Census Bureau reported in 2009, that 19.6% of U.S. children between the ages of 5 and 17 spoke a language other than English at home (Census Bureau, 2009). Since attitudes are constructed based on past experiences, as defined by Allport (1935), it could be postulated that attitudes toward foreign languages, language learning situations and people who speak other languages is constructed. Therefore, if students receive a positive experience with other languages in their elementary school education they will develop positive attitudes toward those languages, toward school, and toward their classmates with other-than-English-language backgrounds, and these attitudes will be reflected in their later life and education (Lindholm-Leary & Borsato, 2001).

2.1.2. Abbreviated history of studies of attitudes in second language acquisition

One of the first studies in second language acquisition was conducted and published by Jordan in 1941. The main goal of this study was to examine correlations between students' attitudes toward various school subjects and their corresponding performance in those subjects. French was among the subjects studied. This study was conducted in England, with students between 11 and 15 years old. The correlation between the school subject of

French and students' attitudes toward it was the strongest one observed. In 1974, 12-year-old students in English, Latin, and French classes were studied by Duckworth and Entwistle and similar results to an earlier study were reported.

From that point on, interest in how students' attitudes toward a second language relate to school performance in that language was born. With the development of new assessment instruments, a new area of research on students' attitudes could be explored. Among the most representative of these studies are those conducted by Gardner and Lambert (1959) and Baker (1985). Gardner and Lambert (1959) studied whether Canadian high school students' attitudes toward French were related with their aptitude to learn the language. They concluded that the two were not related. In the same study, however, they found that students' integrative attitudes were strongly related with their French acquisition. In subsequent years, several studies on integrative and instrumental attitudes were conducted. These include: Sakuragi (2008), on American college students enrolled in Chinese, French, Japanese, or Spanish classes; Bialystok and Fröhlich (1977) on Canadian ninth and tenth grade students enrolled in French class; Oller, Hudson, and Liu (1977) on Chinese-speaking students in English as a second language (ESL) classes in the American education system; Oller, Baca, and Vigil (1977) on Mexican-American women students enrolled in English classes in the New Mexico education system; Gardner, Smythe, Clement, and Gliksman (1976) on Canadian seventh and eighth grade students enrolled in French classes; and Gardner and Lambert (1972) on high-school students in the U.S. enrolled in French classes.

By 1985, Baker had introduced the idea that attitude toward language is related simultaneously with students' home-language and cultural background, as well as with other

factors: age, gender, achievement, and type of school. In his first study, he included Welsh secondary students (between the ages of 11 and 18) in schools with varied characteristics. Baker (1985) argued that in previous studies, the focus had been uni-directional and only considered one factor at a time in a uni-directional way. A two-way effect was not considered; neither was it considered that several factors together and at the same time could be affecting students' attitudes toward learning a second language. In his study, Baker proposed the input-output model to show the bi-directional (or causal) effect of more than one factor. His study involved three schools: one school, where over 70 percent of the students had Welsh-speaking backgrounds; the second school was situated where the predominant culture was Anglo and the students had varied language backgrounds; and the third school was situated where less than one percent of the population had Welsh-speaking background and most of the students were other than Welsh-speaking.

As Baker suggested, studies were done previously that considered one factor at a time. For example, in 1949 and 1950, Jones showed that students between 11 and 14 years of age had more positive attitudes toward the Welsh language if their parents were Welsh-speaking. On the other hand, recently Ehala and Niglas (2006) in Estonia found that students between 15 and 18 years of age living in rural areas had less positive attitudes toward the Estonian language (minority language) than students in urban areas. Therefore, the geographical characteristic of the place where a student is learning a second language could affect their attitudes toward the language itself.

Some studies have reported that attitudes toward a foreign language are also related with ethnic background. For example, Sakuragi (2008) found that attitudes of U.S. college

students toward a second language (Chinese, French, Japanese, or Spanish) were related with social distance. Sakuragi (2008) defines social distance as the willingness that a person has to accept and relate with people from a different ethnic background.

The time that students spend learning a language is another factor that the research literature indicates could impact students' attitudes, particularly their cross-cultural attitudes. Riestra and Johnson (1964) reported that as a student learns more about a particular language, he or she develops more positive attitudes toward the people who speak the language. Gardner and Smythe (1975) found that 13- through 18-year-old students' attitudes toward the French Canadian community became more positive when the students spent more time studying French. In other words, the more time (in years) the students spent learning the language, the more positive their attitudes became toward the French-speaking community.

On the contrary, studies on the maintenance of positive attitudes toward the learning of a second language indicate that attitudes tend to decrease over time as students get older according to Gardner and Smythe (1975), Jones (1950), and Jordan (1941). More recently, Kraemer and Zizenwine (1989) found that South African students' attitude toward Hebrew, when enrolled in a Hebrew foreign language class, became less positive after grade nine. Similarly, Donato, Antonek, and Tucker (1996) found that students' attitudes toward learning Japanese in a K-5 Japanese foreign language program became less positive as they moved into higher grades. Tucker and Donato (2001) similarly found that students' attitudes toward learning Japanese increased from grades four to six, but dropped sharply in grade seven. Heining-Boynton and Haitema (2007) also found that elementary school students' attitudes

toward learning a foreign language became more negative over time. These students began studying Spanish or French at the elementary school level and continued studying a world language at the high school level. Cortés (2002), however, claimed that students in grades seven and eight reportedly held more positive attitudes toward the language they were studying (Spanish, French) than students in grades three and four. Masgoret and Gardner (2003), however, found no significant relationship between students' attitudes toward a second language and the students' ages. Gerena (2010) found that Spanish-speaking first grade students reported more positive attitudes toward the Spanish language than Spanish-speaking second grade students after two years in a bilingual program. Based on the variability of these findings, no consistent conclusions regarding the maintenance or improvement of attitudes with age can be claimed at this point.

Few studies were found that compare the attitudes of students enrolled either in a bilingual or a foreign language program with the attitudes of students enrolled in English-only programs with no world language. Some of the most representative of these studies are included here.

Mantle-Bromley (1995) compared the attitudes of middle-school students participating in a French foreign language program with students of the same age who were enrolled in an English-only program. Students participating in the foreign language program reported more positive attitudes toward learning the language than students in the English-only program. Kennedy, Nelson, Odell, and Austin (2000) found that K-5 students enrolled in a Spanish world language program in comparison with students with no foreign language curriculum had more positive attitudes toward school, learning a second language, foreign

people and cultures, and feelings about themselves. In bilingual education, Baker (1985, 1992) found that the type of school (with bilingual and without bilingual Welsh programs) students attended did not have significant effects on the attitudes of middle and high school students' attitudes toward the Welsh language. At this point in time, no comparative studies of young students' attitudes toward languages with students in bilingual education and in traditional English-only programs were found in the literature.

In the following section the type of bilingual education included in this research is defined.

2.2 Two-Way Immersion (TWI)

Two-way immersion (TWI) is a type of dual language or bilingual program in which the student population is representative of two language groups –most often in the U.S., students are Spanish- and English-speaking. In TWI, students learn subject matter content through their native language as well as through the second language in classes made up of speakers of both languages. The goal of a two-way immersion program is that the English-speaking students become proficient in the second language and the second-language speakers become proficient in English while both learn the grade level subject content. In addition, it is expected that students from both language backgrounds develop proficiency in their native languages (Christian, 1996).

Through bilingual education programs, two groups of students benefit—both those whose first language is English and those whose first language is the target language of the program—as they will all become able to communicate in both languages. Dual language or

two-way immersion programs are beneficial for the social inclusion of non-English-speaking students, the maintenance of these students' first language, and the development of a second language for English-speaking students (Baker, 2006; Dermand-Sparks & Edwards, 2009). Christian (2001) theorize four major benefits from two-way immersion programs: 1) students will develop high levels of proficiency in their native language; 2) all students will develop high levels of proficiency in a second language; 3) academic performance for both groups of students will be at or above grade level; and 4) all students will demonstrate positive attitudes and cross-cultural behaviors.

This particular study considered English-speaking and Spanish-speaking kindergarten through second grade students enrolled in two Spanish two-way immersion programs in two Midwest states as the target population.

2.3 World Language Program

The goal of a world language program is to teach a world/foreign language and at the same time relate what students learn to the social cultural and historical background of a language (Kransch, 1993). Today, borders are disappearing because of technology, and new generations are expected to communicate globally, which is only possible if people learn other languages (Leaver, 1997). Over the last decade, the number of elementary and middle schools offering world language has decreased from 31% to 25%, but every day schools express interest in offering foreign language education (Rhodes & Pufahl, 2009). It appears that, the value of knowing more than one language is becoming recognized by schools across the nation.

Multiple benefits are expected with the acquisition of a second, or world, language. These benefits range from general benefits for a whole nation to personal benefits. For example, in the competitive global marketplace, having a population that can function in multiple world languages is beneficial for the country's economic development (Committee for Economic Development, 2006). Due to the events of the last decade (2000-2010), people who speak more than one language will help assure the security and economic development of the country, and will help the country play an important role in the world (Morris, 2002). Currently, an important factor in the U.S. is immigration. Through the knowledge of immigrant languages and the development of cultural understanding across language groups, appreciation for diversity is enhanced (Baker, 2002). Benefits for students who learn a second language include academic benefits, which have been reported frequently in the research, and in addition, the enhancement of students' future career opportunities (Morris, 2002).

In the following section the background and context for the present study is presented.

3. Background and Context of the Study

3.1 Spanish Two-way Immersion Project

This study is part of a larger research grant project undertaken by the National K-12 Foreign Language Resource Center (NFLRC)[1] at Iowa State University, in cooperation with the Iowa Department of Education. The research project overseen and funded by the NFLRC involved collecting longitudinal data from students, parents, teachers, administrators, and school staff concerning attitudes, beliefs in responses to the Spanish TWI program over a four-year period (2006-2010).

A quasi-experimental research design was implemented for the four-year project. In this context, two Midwest school districts agreed to participate in the Spanish two-way immersion project by each identifying a "treatment" school where a new Spanish two-way immersion program was being established. In one school district, the two-way immersion program was first implemented in the 2006-2007 school year, in a newly built, large (700+ students), urban elementary school with high poverty (87% of free and reduced price lunch, GreatSchools, 2011) and traditionally low academic achievement. In the other school district, the two-way immersion program was first implemented in the 2007-2008 school year in a treatment school that was a large, urban elementary school with students representing the middle-high socioeconomic level (49% of free or reduced price lunch, GreatSchools, 2011). To provide the necessary native Spanish speakers required for the two-way immersion

[1] This project was supported with funding from the U.S. Department of Education, Office of Postsecondary Education, and Center for International Education, under grant No. P229A060013-07 to Iowa State University.

program, students whose first language was Spanish were bused from another neighborhood within the urban school district. In each one of the two districts, a school within the same school district with the greatest similarity to the treatment school in population demographics such as economic status, type of neighborhood, home languages, and ethnicity, was selected to serve as a "comparative" school. These comparative schools were very similar to the treatment schools except that they had no two-way immersion or other world language program.

Teachers, who were already part of the staff and familiar with the district school and curriculum, were selected to teach in the two-way immersion program in each district. Teachers who were bilingual taught content entirely in Spanish and other teachers taught content in English. Both grade level teachers taught a mixed group of Spanish-speaking and English-speaking students and shared their two classes of students so that all students received a 50-50% balance of content taught in Spanish and English throughout the school day. The content areas (mathematics, social studies, science, etc.) that each teacher taught varied over time so that during the school year students received each content area both in Spanish and English (although on different topics). This model was continued as the program progressed, beginning in kindergarten and adding one grade level each year. At each grade level one teacher would teach all day, every day in Spanish; and the other teacher, in English.

In each district, the treatment and comparative schools used the same district curriculum, and students in the two-way immersion programs were held to the same standards as other students in the district at their grade level. It is also important to note that

in each district, the Spanish two-way immersion programs were similar in their philosophy, but different in their execution, such as in the curriculum and materials used.

For this study, the following research questions were proposed:

1. Do young students enrolled in a Spanish two-way immersion program demonstrate more positive attitudes toward languages (English and Spanish) than young students who are enrolled in traditional English-only programs?
2. Do young students enrolled in a Spanish two-way immersion program demonstrate more positive attitudes toward factors such as: school, teachers, and classmates than young students enrolled in traditional English-only programs?

3.2 Chinese World Language Project

This study is part of a larger research grant project undertaken by the National K-12 Foreign Language Resource Center (NFLRC)[2] at Iowa State University in collaboration with the Center for Applied Linguistic (CAL) in Washington D.C. The research project overseen by the NFLRC involved collecting longitudinal data from students, parents, teachers, administrators, and school staff concerning attitudes in response to the Chinese world language program and attitudes toward factors such as: school, teachers, and classmates over a three-year period (2007-2010) .

A quasi-experimental research design was implemented for the three-year project. In this context, two Midwest school districts agreed to participate in the Chinese world language

[2] This project was supported with funding from the U.S. Department of Education, Office of Postsecondary Education, and Center for International Education, under grant No. P229A060013-07 to Iowa State University

project by each naming a "treatment" school where a new Chinese world language would be established. In both districts, the Chinese world language program was first implemented in the 2007-2008 school year. In district 1, the treatment school was a magnet school with more than 700 students. This school had an international focus and, in recent years, several classroom teachers had chosen to teach a little French and Italian to students to their own classes. The school was an urban elementary school with a middle-high class socioeconomic level −19% of the students received free or reduced price lunch (GreatSchools, 2011). The second treatment school, in district 2, was also a magnet school in a large, urban elementary school with high levels of poverty (low socioeconomic level) as indicated by the high level of free and reduced price lunch count in the school, 45% (GreatSchools, 2011)[3]. A world language had never been taught in this treatment school before. A school within each of the two districts that was most similar to the treatment school in population demographics, such as economic status, type of neighborhood, home languages, and ethnicity, was invited to serve as a comparative school. Each comparative school was very similar to the treatment school in the same district, except that the comparative schools had no world language program.

The Chinese world language program at both treatment schools began in kindergarten at the beginning of the 2007-2008 school year. These schools hired native Chinese-speaking teachers, who were experienced teachers and who reported that they taught approximately 90% of the time in Chinese during 90 minutes per week, except in the

[3] The socioeconomic level of a school sometimes is defined by the percentage of students receiving free or reduced price lunch. A student can receive a free or reduce price lunch if his/her family is classified in the levels of poverty determined by the Department of Health and Human Services (Federal Education Project, 2011).

kindergarten class in district 1, which was 60 minutes per week. Both teachers used the curriculum designed by the Center for Applied Linguistic in Washington D.C., through a subcontract with, and in collaboration with, the NFLRC and with the project Chinese teachers and project advisors, who were experts in Chinese language education in the U.S.

The following research questions were proposed:

1. Do young English-speaking students who are enrolled in schools with a Chinese world language program demonstrate more positive attitudes toward languages than young English-speaking students who are enrolled in schools with no world language program?
2. Do young English-speaking students participating in a Chinese world language program demonstrate more positive attitudes toward factors such as: languages, school, teachers, and classmates than young English-speaking students enrolled in schools with no world language program?

The following chapters report the findings and conclusions through articles prepared to be submitted to different refereed journals.

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CHAPTER 2. ATTITUDES OF YOUNG SPANISH-SPEAKING STUDENTS IN TWO-WAY IMMERSION PROGRAMS

A paper prepared for submission to the *Bilingual Research Journal*.

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Abstract

This study examines Spanish-speaking kindergarten through second grade students' attitudes toward English and Spanish languages, school, teachers, and classmates. Students enrolled in Spanish two-way immersion programs in two Midwest schools were surveyed. Their attitudes were contrasted with the attitudes of Spanish-speaking kindergarten and first grade students enrolled in English-only programs in schools with similar characteristics within the same districts. Spanish-speaking students enrolled in the two-way immersion program reported more positive attitudes toward both the English and Spanish languages in comparison with Spanish-speaking students in the English-only program. The results do not indicate differences in attitudes toward school, teachers nor classmates.

Key Words: Attitude, Two-way Immersion, Elementary, Spanish-speaking

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INTRODUCTION

Twenty percent of kindergarten through eighth grade students in the United States speak languages other than English at home. Of this group, Hispanic students are the most likely to speak a language other than English − 68.9 percent (KewalRamani, Gilbertson, Fox, & Provasnik, National Center for Education Statistics, 2007). It is well recognized that children who do not speak the majority societal language face many difficulties at school (Baker, 2006, 1992; Cummins, 1989, 2000; Hornberger, & Chick, 2001; Tosi, 1988; Valdés, 2001; Veltman, 2000;). The most common educational support that these children receive in elementary education is through pull-out English (McKeon, 1987). In this type of education, the student with limited proficiency in English is pulled-out of the classroom for special instruction in English as a second language. Although this program provides support for their learning of English, it causes students to lose content instruction time in the classroom and can cause them to struggle to achieve academic skills and meet grade level standards (Ovando & Collier, 1998). A well-recognized alternative that has been used with Spanish-speaking students is bilingual education (Collier & Thomas, 2004; Linton, 2004; Rolstad, Mahoney, & Glass, 2005; Oller & Eilers, 2002; Valdés, 2001). In bilingual education part of the instruction is given in the minority-language (Spanish) and part in English (Baker, 1992; Lindholm-Leary, 2001; Hakuta, 1987).

The main goal of dual language or bilingual education is the development of the student's first language along with the development of high proficiency and literacy in a second language (Christian, 2001). Through bilingual education programs, two groups of students benefit—both those whose first language is English and those whose first language

is the target language of the program—as they all learn to communicate in both languages (Baker, 2006). Numerous studies in bilingual education recognize that minority language students in a bilingual education program improve in many aspects of their school performance (Cummins, 1979; Bialystok, 2001, 1991; Díaz, 1985; Hakuta, 1987; Lindholm-Leary, 2001). Some researchers, when discussing the language of instruction of the minority-language students, argue that later success in school and life of non-English speaking students depends on the development of skills in their first language (Tabors, 2008; Valdés, 2001). In their research, Cummins and Swain (1986) established that for students' success, the development and maintenance of their first language is very important. Other researchers also have reported the efficacy of supporting language-minority students in their own language. For example, López and Tashakkori (2006) found that students who begin with low-levels of English proficiency acquire higher levels of oral proficiency in English when they also receive native language support—in other words, first language development fosters higher achievement in the second language. Thomas and Collier (1997) determined that language-minority students who maintain uninterrupted cognitive development in their first language until the age of twelve have higher English academic performance than their peers with no support in their first language.

Two-way immersion is one type of bilingual education. Two-way immersion programs provide mixed groups of Spanish-speaking and English-speaking students with instruction in both Spanish and English. Each language is used for half of the school day and half of the content areas are taught in each language on any given day (Baker, 2006; Barnett, Yarosz, Thomas, Jung, & Blanco, 2007; Valdés, 2001). These programs are an increasingly

common approach to addressing the needs of Spanish-speaking students in the U.S. (Barnett, *et al.*, 2007; Howard, Sugarman, & Christian, 2003; Lindholm-Leary, 2005; Thomas & Collier, 1997).

The purpose of this article is to examine the attitudes of young Spanish-speaking students participating in Spanish two-way immersion programs in two school districts. Studies of students' attitude are important since attitudes toward languages, school subjects and school environment can affect students' school performance (Heining-Boynton & Haitema, 2007; Lee, 2006; Lindhom-Leary, 2001). In addition, young students develop an attitude toward a second language, or even toward their first if it is the target language, based on the recognition of the value of that target language in the school setting (Clark, 2000). While there are a plethora of studies related to the benefits and attitudes of older students toward languages and school, young students have been largely ignored.

THEORETICAL FRAMEWORK

Attitudes

From a psychological point of view, attitude is defined as a mental state of readiness to respond to something based on past experiences and influencing behavior toward a specific object (Allport, 1935). Attitudes are an important factor in constructing motivation in people, but attitudes are not the only factor involved in constructing it. Motivation is the desire to achieve a goal (Gardner, 1985). Therefore, the difference between attitude and motivation is

that the former is “object” specific and the latter is “goal” specific (Baker, 1992). In this particular study, only attitudes are examined. In other words, the interest in this study is in the factors called “object” specific, for example, attitudes toward languages, school subjects, and school.

Historically, in education, studies of attitudes have been mostly concerned with student attitudes toward school, school subjects, teachers, and other students. Among the studies of school subjects, students’ attitudes toward learning a world language were explored by researchers such as Baker (1992) and Gardner and Lambert (1972). These researchers have reported the most innovative and groundbreaking findings concerning students’ attitudes toward second languages. Baker researched students’ attitudes in bilingual education, and Gardner, students’ attitudes in foreign language education. Beginning in the 1930s, Gardner and Lambert created a battery of questions to measure students’ attitudes toward languages. Later, Baker (1992), through a causal model, tested whether students’ attitudes are affected by more than one factor at a time. Most of the studies on students’ attitudes toward learning a second language are, however, focused on students from the upper-grade levels of elementary education and older students (Baker, 1992; Heining-Boynton & Haiteman, 2007; Lindholm-Leary, 2001; Lindholm-Leary & Borsato, 2001; Oliver & Purdie, 2010).

Studies also have been carried out on the attitudes of young students participating in bilingual programs. Lambert and Tucker (1972) in a bilingual French and English program in Canada, studied second through fourth grade elementary school students’ attitudes toward themselves and toward native speakers of the learned language. Their attitudes were

contrasted with the attitudes of students in comparative schools that provided French-only and English-only education. The findings indicate that second graders from the bilingual program had more positive attitudes than the students from the comparative schools. By fourth grade, students from the bilingual program had more positive attitudes toward themselves than those from the comparative schools. The attitudes of the students in the bilingual program toward native speakers of the target language, however, dropped sharply by fourth grade. More positive attitudes toward native speakers of the target language were found in students from the comparative school. Similar results were found in Spanish bilingual programs (Christian, Montone, Lindholm, & Carranza, 1997; Lindholm, 1994). Other studies in Spanish bilingual education programs showed more favorable attitudes toward being bilingual than monolingual (e.g. Cazabon, Lambert, & Hall, 1993; Lindholm, 1994). Lindholm-Leary (2001), studied the language and cross-cultural attitudes toward language of two groups of elementary students. These students came from two school settings: one setting had a high percentage (more than 66%) of non-English-speaking students (minority students) and a fairly high socioeconomic status (only 20% of the English-speaking students were eligible for participation in the free and reduced price lunch program at school[8]). The second setting had a low percentage of minority students in the school (less than 66% of the students represented minorities) and a fairly high socioeconomic status (less than 20% of the English-speaking students were eligible for participation in the free/reduced price lunch program). In both school settings the model of bilingual education was 90% of the time dedicated to content instruction in the target language and 10% in English. One of

[8] The socioeconomic level of a school sometimes is defined by the percentage of students receiving free or reduced price lunch. A student can receive a free or reduce price lunch if his/her family is classified in the levels of poverty determined by the Department of Health and Human Services (Federal Education Project, 2011).

the main findings from this study was that no differences in the students' attitudes toward other cultures and languages were found between students from different socioeconomic status, gender, or ethnicity.

Only one study on attitudes toward languages in young students in Spanish two-way immersion education has been found. Gerena (2010) studied attitudes toward biliteracy (English and Spanish) in a mixed group of first and second grade students, who had either English or Spanish language backgrounds, enrolled in a Spanish two-way immersion program. Findings indicate that English-speaking and Spanish-speaking first-grade students had significantly more favorable attitudes toward the Spanish language than second graders; Spanish-speaking students in second grade had statistically significantly less positive attitudes toward Spanish than any other group in the study.

The study reported here will focus on early elementary school Spanish-speaking students (K-2) participating in a two-way Spanish/English immersion program. Their attitudes toward their first and second languages, school, classmates, and school subject content areas will be contrasted with the attitudes of young Spanish-speaking students who are participating in an English-only program.

Two-Way Immersion Programs

Dual language education, or bilingual education, is education in which the main goal is the development of students' first language, along with the development of high proficiency and literacy in a second language (Christian, 2001). Two-way immersion is a type of dual language education that provides content instruction and language development in two

languages. To be successful, two-way immersion programs need the student population to be representative of the two target language groups and integrated by languages for all or most of the instructional day (Christian, 1996).

Howard and Christian (2002) suggest four major benefits from two-way immersion programs: 1) students develop high levels of proficiency in their native language; 2) all students develop high levels of proficiency in a second language; 3) academic performance for both groups of students is at or above grade level; and 4) all students demonstrate positive attitudes and cross-cultural behaviors. The current study is focused on testing one of the suggested major benefits of two-way immersion programs: "all students will demonstrate positive attitudes."

PRESENT STUDY

This study is part of a larger research project undertaken by the National K-12 Foreign Language Resource Center (NFLRC)[9] at Iowa State University, in cooperation with the Iowa Department of Education. This research project involved collecting longitudinal data from students, parents, teachers, administrators, and school staff, including that of attitudes in response to the Spanish two-way immersion program over a four-year period (2006-2010).

In the research study reported here, the attitudes of Spanish-speaking students enrolled in Spanish two-way immersion programs from two school districts in two Midwest states will be evaluated and compared with the attitudes of Spanish-speaking students at the

[9] This project was supported with funding from the U.S. Department of Education, Office of Postsecondary Education, and Center for International Education, under grant No. P229A060013-07 to Iowa State University.

same grade levels enrolled in English-only programs in the same school districts. The following research questions are proposed:

1. Do young Spanish-speaking students enrolled in a Spanish two-way immersion program demonstrate more positive attitudes toward languages (English and Spanish) than young Spanish-speaking students who are enrolled in traditional English-only programs?
2. Do young Spanish-speaking students enrolled in a Spanish two-way immersion program demonstrate more positive attitudes toward factors such as school, teachers, and classmates than young Spanish-speaking students enrolled in traditional English-only programs?

METHOD

Research Design

A quasi-experimental research design was implemented for the four-year project. In this context, two Midwest school districts agreed to participate in the Spanish two-way immersion project by each identifying a "treatment" school where a new Spanish two-way immersion program was being established. In one school district, the two-way immersion program was first implemented in the 2006-2007 school year, in a newly built, large (700+ students), urban elementary school with high poverty (87% of free and reduced price lunch, GreatSchools, 2011) and traditionally low academic achievement. In the other school district, the two-way immersion program was first implemented in the 2007-2008 school year in a

treatment school that was a large, urban elementary school with students representing the middle class socioeconomic level (49% of free or reduced price lunch (GreatSchools, 2011). To provide the necessary native Spanish speakers required for the two-way immersion program, students whose first language was Spanish were bused from another neighborhood in the urban school district. In each of the two districts, a school within the same school district with the greatest similarity to the treatment school in population demographics, such as economic status, type of neighborhood, home languages, and ethnicity, was selected to serve as a "comparative" school. These comparative schools were very similar to the treatment schools except that they had no two-way immersion, dual language, or other world language program.

Teachers, who were already part of the staff and familiar with the district school and curriculum, were selected to teach in the two-way immersion program in each district. Teachers who were bilingual taught content entirely in Spanish and other teachers taught content in English. Both grade level teachers taught a mixed group of Spanish-speaking and English-speaking students and shared their two classes of students so that all students received a 50-50% balance of content taught in Spanish and English throughout the school day. The content area (mathematics, social studies, science, etc.) that each teacher taught varied over time so that during the school year students received each content area both in Spanish and English (although on different topics). This model was continued as the program progressed, beginning in kindergarten and adding one grade level each year. At each grade level one teacher would teach all day, every day in Spanish; and the other teacher, in English.

In each district, the treatment and comparative schools used the same district curriculum, and students in the two-way immersion programs were held to the same standards as other students in the district at their grade level. It is also important to note that in each district, the Spanish two-way immersion programs were similar in their philosophy, but different in their execution, such as in the curriculum and materials used.

Sample

Involvement in the two-way immersion programs was voluntary. No random sampling or random assignment was done in identifying the treatment or comparative groups. All students enrolled in the two-way immersion programs, and all students at the same grade levels in the comparative schools, were invited to participate in the study. Parents were asked to sign consent forms, approved by the university Institutional Review Board and provided to parents in English and Spanish, if they wished their child to be included in the study. In the two-way immersion programs most parents granted consent for their child to be involved in the research study. In district 1, however, because of the high level of poverty, as indicated by the percentage of students receiving free and reduced price lunch (87% in the treatment school and 84% in the comparative school, GreatSchools, 2010), there was a continuous mobility of families in the neighborhood. This situation, together with the large number of newcomers (mainly Hispanic immigrants) searching for work in the packing plants in the area, resulted in more Spanish-speaking students being available to participate in the program.

Table 1 shows the home language distribution of all students enrolled in the two-way

immersion program by district and school year. (Note that the table does not include the students in the comparative schools). It has been suggested in the literature that for a successful two-way immersion program, half of the total of students participating in the program should speak the target language and the other half should speak the majority language (Baker, 1996; Cloud, Genesee, & Hamayan, 2000; Christian, 1996; Lindholm-Leary, 2001). In this study, however, due to the mobility of the student population in district 1 and the decision of administration to accept only new Spanish-speaking students whenever a student of either language left the program, a balanced group of students from each language was not reached. Due to the reality of district 1, the recommendation of having half of the students in the two-way immersion program from Spanish home language backgrounds, and half from English, in order to participate together in the instructional activities (Christian, 1996), was not met.

As the two-way immersion program in district 1 lost students, whether English-speaking or Spanish-speaking, they were replaced by the school administrator, who did not recognize the importance of keeping a balance of Spanish and English-speaking students in the classroom for the well-being of the two-way immersion program, with students who spoke Spanish. Many of these students had little or no English skills, as is common with most newcomers. New students were added to the comparative school sample, as well; however, the mobility of English speakers from the two-way immersion program and the lack of parental consent from Spanish speakers at the comparative school resulted in the proportion of Spanish speakers at the treatment schools exceeding the proportion of Spanish speakers in the comparative schools by almost two to one at the conclusion of the project.

TABLE 1
Home Language of Students Enrolled in a Two-Way Immersion Program

by District, Grade Level and School Year

		Home Language		
School Year	*Grade*	*Spanish*	*English*	*Total*
		District 1		
2006-07	K	23	17	40
		57.5 %	42.5%	100.0%
2007-08	K	27	15	42
		64.3%	35.7%	100.0%
	1	28	10	38
		73.7%	26.3%	100.0%
2008-09	K	29	17	46
		63.0%	37.0%	100.0%
	1	22	10	34
		68.8%	31.3%	100.0%
	2	24	10	34
		70.6%	29.4%	100.0%
2009-10	K	32	13	45
		71.1%	28.9%	100.0%
	1	28	15	43
		65.1%	34.9%	100.0%
	2	24	8	32
		75.0%	25.0%	100.0%
		District 2		
2007-08	K	13	18	31
		41.9%	58.1%	100.0%
2008-09	K	13	23	36
		36.1%	63.9%	100.0%
	1	14	17	31
		45.2%	54.8%	100.0%
2009-10	K	18	18	36
		50.0%	50.0%	100.0%
	1	11	20	31
		35.5%	64.5%	100.0%
	2	15	17	32
		46.9%	53.1%	100.0%

Therefore, the sample size of second grade of students from district 2 participating in the same program since kindergarten is very small (only 13 in the treatment school and 5 from the comparative school). This does not mean that in the two-way immersion program the number of students was limited to this number. This number represents the students for whom parental/guardian consent was obtained each year and who had been participating in the same school program (whether in treatment or comparative) since kindergarten. To avoid contamination or bias in their attitudes from other school experiences, in examining student attitudes it is important to consider only students who have been participating since kindergarten in the program, whether in treatment or comparative.

Cross-sectional analysis was used with students who had been in their respective programs, two-way immersion (treatment) or English-only (comparative) since kindergarten. Due to the unbalanced sample sizes present in district 1, each sample in that district was weighted for the analyses. The idea of weighting the sample is obtain results that correctly represent the population of students participating in the study. Table 2 clarifies the sample size obtained for each grade level by district and the weighting used in district 1.

Student Attitude Survey

The questionnaire for measuring students' attitudes was adapted from a longer instrument originally designed to measure the attitudes of former students of two-way immersion programs at the time that they were in high school and college (Lindholm-Leary & Borsato, 2001). The original source for the format of the student attitude survey was the Center for

Applied Linguistics (CAL), which shared a four-question draft survey it had developed for grades pre-K-4 with Rosenbusch in 1998. The CAL draft survey consisted of four questions

TABLE 2

Sample Size by District, Grade Level, School Program, and Home Language

		Sample size	
District	*Grade*	*Treatment*	*Comparative*
District 1	K	101	55
	Weight	.77	1.42
	1	64	38
	Weight	.80	1.34
	2	37	15
District 2	K	41	44
	1	20	22
	2	11	10

and used a response format of two categories: a smiling face and a frowning face. This survey format was adapted with the permission of, and in consultation with, CAL for use in the IN-VISION project, a 5-year federally-funded Technology Innovation Challenge Grant that involved the establishment of elementary school Spanish programs (Rosenbusch, García Villada, & Padgitt, 2003). Besides adding questions relevant to the project, IN-VISION staff consulted with a university laboratory school kindergarten teacher about how to make the survey comprehensible to K-2 students. The teacher suggested placing in the left hand margin, beside the number of each question, a picture to help students identify the correct line of text for the question.

For the current study, the NFLRC research staff kept the same presentation and survey response formats as used in IN-VISION and adapted the content of the questions to this project. The resulting survey for students in both treatment and comparative schools consisted of 14 statements (see Appendix A).

TABLE 3

Grouping Categories for Survey Statements

Attitudes toward languages	*Positive academic attitudes*	*Classroom environment*	*School environment*
I like Spanish.	I am good at my schoolwork.	I like my classmates.	I like school.
I like English.	I am a good student.	My teachers like me.	Going to school is important.
Learning to read and write in Spanish is important.	I like math.	My classmates like me.	I feel safe at school.
	I like reading.	I like my teachers.	

To facilitate the interpretation of the results, categories for grouping the statements in the survey, which were adapted from Lindholm-Leary (2001), are used in this study.

Therefore, according to these grouping categories, the survey statements relate to students' attitudes as follows: a) attitude toward languages (statements 6, 7, 14); b) positive academic attitude (statements 1, 5, 8, 9); c) classroom environment (statements 2, 3, 4, 13); and d) school environment (statements 10, 11, 12) (see Table 3).

In district 1, most of the grouping categories had high or acceptable internal consistency or correlation indicated by the Cronbach's coefficient alpha. In district 2, however, the grouping categories were not as strong as was expected (see Table 4).

TABLE 4

Cronbach's Coefficient Alpha by Category, Grade Level, and District

		Cronbach's Coefficient Alpha	
Category	*Grade*	*District 1*	*District 2*
Attitudes toward languages	K	.34	.32
	1	.39	.16
Positive academic attitudes	K	.53	.24
	1	.56	.04
Classroom environment	K	.52	.35
	1	.72	.46
School environment	K	.63	.43
	1	.73	.69

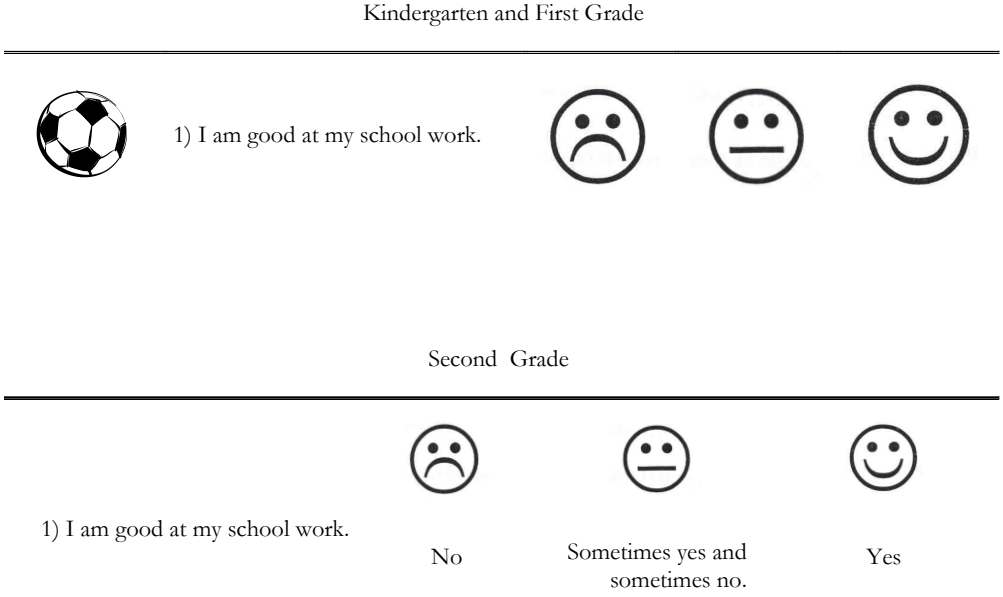
Attitude Survey Administration

Each year research team members administered the survey assessments in both districts in both the treatment and the comparative schools. In both schools in each district, kindergarten and first grade Spanish-speaking students were provided with the option of completing the survey in either English or Spanish. For those students who chose Spanish, the survey was both provided in, and administrated in, Spanish. At the second grade level, no option was given, and all students were surveyed in English.

Prior to beginning the survey, students were given sample instructions that a research team member used to familiarize them with the survey format and process and the use of the responses categories. Students also were instructed to keep their eyes on their own papers and to keep their responses covered. To assist students in completing the paper survey, since they were not all proficient readers, kindergarten and first grade students were directed by a

FIGURE 1

Survey Sample for Kindergarten and First Grade Compared with Second Grade



research team member to: a) put their finger on a picture; b) listen carefully to what the research team member read, and c) then color in the face that reflected how they felt about the statement. Second grade students were also provided with sample instructions, but they were asked to read the statements carefully and in silence and to mark their answer according to their own feelings. Notice that at this grade level no pictures starting each statement were

included, face sizes were smaller, and under each one of the faces the corresponding answer was written: “No”, “Sometimes yes and sometimes no”, and “Yes” (see Figure 1).

Data Analysis

Student responses to the survey were coded from 1 to 3 (No = 1; Sometimes yes and sometimes no = 2; and Yes = 3). In other words, each code number represents a category and the implicit value of each is an indication of positivity toward the proposed statement in the survey. Only one out of three possible answers was allowed per statement. Therefore, considering that all statements proposed in the surveys have categorical responses, the most appropriate distributional assumption for each statement is a Multinomial distribution.

The main goal of the analysis is to test the hypothesis that Spanish-speaking students in a school with a two-way immersion program have more positive attitudes toward each one of the statements in the survey in contrast with the responses given by Spanish-speaking students in a school with an English-only program. In other words, the interest is to test whether the “school program” (which is either the Spanish two-way immersion program or the English-only program) is producing an effect on Spanish-speaking students’ attitudes.

In terms of the analysis, the following procedures were followed:

a) Because in both districts the Spanish two-way immersion programs are similar in their philosophy but different in their execution, such as curriculum and materials, the

students' responses by districts were analyzed separately. In other words, each treatment school was analyzed separately with its respective comparative school.

b) A cross-sectional analysis was used. In other words, all students for whom consent was received and who were participating in kindergarten in each of the years of the study were analyzed together as kindergarten students. The same strategy was used for first grade and second grade.

c) To avoid any bias from other educational programs in the results, only students participating in their respective school programs since kindergarten were considered in the analysis.

d) Taking into consideration the sample sizes and the distributional assumptions, the following statistical analyzes were used:

    a. For students in kindergarten and first grade, a Generalized Linear model with a Multinomial distribution and cumulative logit link function, with the answers to each statement of the survey as the dependent variable and the school program (two-way immersion program or English-only program), as the independent variable;

    b. For students in second grade, Fisher's exact test was used to measure whether the proportion of students responding "Yes" to each one of the statements from both types of programs (two-way immersion and English-only) are statistically different.

RESULTS

Attitudes toward Languages

Table 5 provides the results obtained for both school districts from a generalized linear model for the "Attitudes toward languages" category of statements, which includes the statements: I like Spanish; I like English; and Learning to read and write in Spanish is important (see Table 5):

For the statement "I like Spanish" in district 1, the *p*-values for both kindergarten (*p*-value= .04) and first grade students (*p*-value= .03) indicate that the difference in the means between the treatment school and its comparative school are highly statistically significant (see Table 5). The estimated values of those differences indicate that the difference in the mean of the levels of agreement expressed by the students in the treatment school is more positive. In other words, on the average, a larger number of positive responses were received from students in the school with the Spanish two-way immersion program when compared with the responses given by students from the school with the English-only program. In fact, according to the estimated value of the differences, Spanish-speaking kindergarteners' responses were, on the average, .85 points higher in the treatment school than the average of responses given by Spanish-speaking kindergarten students in the comparative school. For Spanish-speakers in first grade, the average of the responses to this statement was 1.29 points higher in the treatment school than the average of the responses of their peers in the comparative school. For district 2, on the other hand, the differences between the treatment and comparative schools for this

TABLE 5

Generalized Linear Model (Multinomial Link=Cumulative Logit)

Results for the Statement Category "Attitudes toward Languages"

among Spanish-speaking Students

		School program (Treatment school vs. Comparative school)			
		District 1		*District 2*	
Statement		*Estimate*	*p-value*	*Estimate*	*p-value*
I like Spanish.	K	.85	.04*	.52	.40
	1	1.29	.03*	-.11	.90
I like English.	K	-.29	.46	-1.06	.04*
	1	.38	.58	.34	.64
Learning to read and write	K	.47	.27	-.80	.11
in Spanish is important.	1	2.39	.01*	.52	.52

*: Statistically significant

statement were not statistically significant. In fact, the estimated value of the difference (-.11) indicates that first grade students in the treatment school with the Spanish two-way immersion program showed less positive attitudes toward the statement "I like Spanish", on the average, than their peers in the comparative school (estimated value = .52).

For the statement "I like English", in district 1, no statistically significant differences were found between the responses given by Spanish-speaking students from the treatment school with the two-way immersion program and the comparative English-only school in either kindergarten or first grade (see Table 5). The mean of the responses from kindergarten students in the comparative school was larger than the mean of the responses given by

kindergarten students in the school with the two-way immersion program (estimated value = -.29). In other words, more positive responses were obtained from students in the comparative school. The mean differences indicate, however, more positive attitudes in first graders from the treatment school (estimated value = .38). In district 2, on the other hand, the *p*-value .04 indicates highly statistically significant differences between the mean of the responses given by Spanish-speaking kindergarten students in the treatment school and their Spanish-speaking peers in the comparative school. This difference is, on the average, more negative in students from the treatment school (estimated value = -1.06). This condition changed among Spanish-speaking first grade students in the treatment school who, on the average, were more positive toward the statement "I like English," even when the difference with the comparative school was not significant.

For the statement "Learning to read and write in Spanish is important", the only highly statistical difference was found in Spanish-speaking first grade students in district 1 (see Table 5). The difference in the means is 2.39 points. In other words, the average response given by Spanish-speaking students from the treatment school was 2.39 higher than the average response given by Spanish-speaking students from the comparative school. This difference was larger than what was found among Spanish-speaking kindergarten students. The situation for district 2 is similar in the sense that even when the differences are not statistically significant, the estimated value of the differences indicate that in first grade, Spanish-speaking students in the treatment school showed more positive attitudes toward the statement than Spanish-speaking students in kindergarten.

TABLE 6

Fisher's Exact Test Results for the Statement Category "Attitudes toward Languages" among Spanish-speaking Students

		vs.	
Statement	*Grade*	*District 1*	*District 2*
		p-value	*p-value*
I like Spanish.	2	.98	.97
I like English.	2	.01*	.01*
Learning to read and write in Spanish is important.	2	<.0001*	.02*

*: Statistically significant

Due to the fact that second grade students' responses were tested statistically using a different methodology because of the small sample size, the results from Fisher's Exact Test are included in a separate table (see Table 6). For the statement "I like Spanish", in both district 1 and district 2, the proportion of second grade Spanish-speaking students enrolled in the Spanish two-way immersion program who agreed with the statement was not statistically significant different in comparison with the proportion of Spanish-speaking students who agreed with the statement in the comparison school. The difference in the proportion of responses agreeing with the statement "I like English" in the treatment and the comparison schools in both districts was statistically significant. As hypothesized, the proportion of

students agreeing with the statement was higher in the treatment school than in the comparative school in both districts. In both district 1 and district 2, for the statement

"Learning to read and write in Spanish is important", the proportion of positive responses from Spanish-speaking students in the treatment schools is larger, and highly significant, when compared with the proportion of positive responses given by Spanish-speaking students in the comparative school. In other words, the proportion of positive responses is much larger in Spanish-speaking second grade students from schools with Spanish two-way immersion program than from Spanish-speaking second grade students from schools with English-only programs.

Positive Academic Attitude

Table 7 reports the results obtained by using a Generalized Linear Model for analyzing the responses for Spanish-speaking students to statements that make up the category "Positive Academic Attitudes".

The statements forming the category "Positive Academic Attitudes" indicate significant differences in the responses given by first grade Spanish-speaking students in district 1 to the statements "I am good at my schoolwork" and "I like math" (see Table 7). The mean is larger in the treatment school than in the comparative school as the estimated values of those differences indicate (1.53 and 1.31, respectively). Even though, the differences in the means for the statements "I am a good student" and "I like reading" are not statistically significant, by first grade the estimate differences (.84 and .42, respectively) indicate more positive

TABLE 7

Generalized Linear Models (Multinomial Link=Cumulative Logit) Results for the Category "Positive Academic Attitudes" among Spanish-speaking Students

		School Program (Treatment School vs. Comparative School)			
		District 1		*District 2*	
Statement		*Estimate*	*p-value*	*Estimate*	*p-value*
I am good at my schoolwork.	K	.11	.88	.41	.59
	1	1.53	.04*	-.15	.92
I am a good student.	K	.85	.18	-1.01	.17
	1	.84	.24	-.85	.51
I like math.	K	-.04	.93	-.54	.27
	1	1.31	.04*	-.60	.35
I like reading.	K	.13	.75	.16	.72
	1	.42	.45	1.55	.08

*: Statistically significant

attitudes in Spanish-speaking students from the treatment school with the two-way immersion program than in the comparative school. In district 2, however, none of the differences was found to be significant. In addition, the only statement for which the differences were positive in both kindergarten and first grade was the statement "I like reading". No significant differences in the proportion of positive responses were found for any of the statements in the category "Positive Academic Attitudes" for Spanish-speaking second grade students (see Table 8), even though a significance-value of .06 was found for the statements "I am a good student" and "I like reading" in district 2. These results indicate that the differences in students' responses to these statements are marginally significant, with more positive attitudes in Spanish-speaking students in schools with Spanish two-way

immersion programs than Spanish-speaking students from schools with English-only programs.

TABLE 8

Fisher's Exact Test Results for the Category "Positive Academic Attitudes" among Spanish-speaking Students

		vs.	
Statement	*Grade*	*District 1*	*District 2*
		p-value	*p-value*
I am good at my schoolwork.	2	.45	.27
I am a good student.	2	.81	.06
I like math.	2	.86	.61
I like reading.	2	.82	.06

Classroom Environment

"My teachers like me" is the only statement in the category of "Classroom Environment" for which a marginal statistically significant difference was found in the means of the responses given by Spanish-speaking kindergarten students in district 1 (see Table 9). The difference between the means of the treatment and the comparative schools is negative, which indicates greater negativity among Spanish-speaking kindergarten students' responses in the school with the Spanish two-way immersion in contrast with the responses given by students from

TABLE 9

Generalized Linear Models (Multinomial Link=Cumulative Logit) Results for the Category "Classroom Environment" among Spanish-speaking Students

		School program (Treatment school vs. Comparative school)			
		District 1		*District 2*	
Statement		*Estimate*	*p-value*	*Estimate*	*p-value*
I like my classmates.	K	-.11	.79	-.31	.54
	1	.16	.78	.88	.26
My teachers like me.	K	-1.53	.003*	.37	.51
	1	1.57	.09	.73	.44
My classmates like me.	K	.27	.49	.46	.38
	1	.63	.28	.33	.66
I like my teachers.	K	-.48	.39	-1.01	.12
	1	1.28	.17	1.15	.34

*: Statistically significant

the English-only comparison school. By first grade, however, even though the difference in the means of the responses is not statistically significant, that difference is positive. In other words, there were more positive attitudes from Spanish-speaking first grade students in the school with the Spanish two-way immersion program to the statement "My teacher like me" than from Spanish-speaking first grade students in the comparison school. In general, the differences of means to the responses given by first grade students are positive for all of the other statements in the "Classroom Environment" category in district 1. For district 2, the situation is similar, with no statistically significant differences for any of the statements in this category (see Table 9).

TABLE 10

Fisher's Exact Test Results for the Category "Classroom Environment" for Spanish-speaking Students

		vs.	
Statement	*Grade*	*District 1*	*District 2*
		p-value	*p-value*
I like my classmates.	2	.82	.88
My teachers like me.	2	.86	.91
My classmates like me.	2	.93	.86
I like my teachers.	2	.92	.78

No significant differences were found for any of the statements of the category "Classroom Environment" for Spanish-speaking second grade students (see Table 10).

School Environment

In the case of the category "School Environment", no statistically significant differences in the means were found for any of the statements in either of the districts (see Table 11). Although there were no statistically significant differences between the mean of the responses given by Spanish-speaking kindergarten students from the treatment school with the two-way immersion program and Spanish-speaking students from the comparative English-only school to the statement "I feel safe at school", in district 1 the negative

estimated value of the difference indicates that more negative attitudes were reported by students from the treatment school. In district 2, Spanish-speaking kindergarten students from the treatment school consistently reported more negative attitudes toward all three statements in this category: “I like school”, “Going to school is important”, and “ I feel safe at school”, than did Spanish-speaking kindergarten students in the English-only comparative school. In first grade students, however, for two of the statements, the differences in the response means changed from negative to positive. In other words, to the statements “I like school” and “I feel safe at school”, Spanish-speaking students in the school with a Spanish two-way immersion program reported more positive attitudes than did students from the comparative school with the English-only program. For the statement “Going to school is important”, no statistically

TABLE 11

Generalized Linear Model (Multinomial Link=Cumulative Logit) Results

for the Category “School Environment” among Spanish-speaking Students

		School program (Treatment school vs. Comparative school)			
		District 1		*District 2*	
Statement	*Grade*	*Estimate*	*p-value*	*Estimate*	*p-value*
I like school.	K	.56	.19	-.97	.08
	1	.57	.29	.79	.27
Going to school is	K	.57	.17	-.41	.39
important.	1	1.27	.17	-.54	.52
I feel safe at school.	K	-.24	.53	-.35	.48
	1	.26	.63	1.45	.15

significant *p*-values were found for kindergarten and first grade Spanish-speaking students in the treatment school. The estimated values show, however, bigger differences in the responses given by first grade students than the responses given by students in kindergarten. In other words, more positive responses were given by Spanish-speaking students in first grade in the treatment school than in the comparative school.

TABLE 12

Fisher's Exact Test Results for the Category "School Environment"

		vs.	
Statement	*Grade*	*District 1*	*District 2*
		p-value	*p-value*
I like school.	2	.37	.26
Going to school is important.	2	.65	.46
I feel safe at school.	2	.37	.27

For second grade students, no statistically significant differences for the category "School Environment" were found in the proportion of positive responses given by Spanish-speaking students from the treatment schools with the two-way immersion program as compared with the proportion of positive responses given by Spanish-speaking students from the English-only comparative school (see Table 12).

DISCUSSION

In this study, young Spanish-speaking students from two Midwest school districts enrolled in Spanish two-way immersion programs showed more positive attitudes toward both the Spanish and the English languages in comparison with Spanish-speaking students enrolled in schools with English-only programs. These results are concordant with findings reported by Gerena (2010) who found positive attitudes toward both the English and Spanish languages in Spanish-speaking kindergarten and first grade students participating in a Spanish two-way immersion program. Gerena, however, did not contrast these responses with those of students in a comparative school with an English-only program, as done in this study.

This study, therefore, clarifies the value of a two-way immersion program for Spanish-speaking students who report more positive attitudes toward both the English and Spanish languages. Oliver and Purdie (1998) claim that for bilingualism to develop in a bilingual program, it is important for students to have positive attitudes toward both languages of instruction. Thus, as a result of this study, evidence is provided to indicate that a two-way immersion program encourages Spanish-speaking students to become bilingual because these students express positive attitudes toward both English and Spanish.

Gerena (2010) reports that students' positive attitudes toward languages decline with age. In the present study, by second grade, the proportion of Spanish-speaking students enrolled in Spanish two-way reporting positive attitude toward Spanish language was not statistically significant larger than the proportion of Spanish-speaking students enrolled in a

English-only program. The results also show that the proportion of Spanish-speaking students reporting positive attitudes toward English language was statistically significant larger than the proportion of English-speaking second grade students enrolled in a English-only programs. In other words, the attitude toward Spanish in Spanish-speaking second students in Spanish two-way immersion programs become less positive over time, and the attitude toward English become notoriously more positive than the attitude of Spanish-speaking students in a English-only program. This result coincides with the findings reported by Gerena (2010) who indicated that one causal of this situation could be that "the social value of Spanish language is diminished over time" in Spanish-speaking students (p. 68). In this present study, on the contrary, the Spanish-speaking students in Spanish two-way immersion programs showed more positive attitudes toward the statement "Learning to read and write in Spanish is important" than Spanish-speaking students from the comparative school. This is an indication that even though second grade Spanish-speaking students have less positive attitudes toward Spanish language, they recognize the importance of knowing how to read and write in their mother language.

For the statement category "Positive Academic Attitude", most of the statements for district 1 indicate more positive attitudes than were found in district 2. Therefore, in this study, the Spanish-speaking students from the district with the highest level of poverty (free and reduced price lunch over 80%) report having more positive attitudes toward school than the Spanish-speaking students studying in the district with a higher socioeconomic level. It should be noted, however, that the Spanish-speaking students in district 2 also represent a high level of poverty. In this district, the treatment school with the Spanish two-way

immersion program was in an upper-middle socioeconomic class neighborhood and the Spanish-speaking students were bused to the school from a high-poverty neighborhood. In other words, the Spanish-speaking students in the two-way immersion program in district 2 were not in their own neighborhood. This factor could be affecting their responses in the statement category "Positive academic attitudes". Further research, therefore, needs to done on this aspect of student attitudes. The results obtained in district 1, however, are in agreement with what was reported by Lindholm-Leary (2001), who found strong positive attitudes for all of the statements in the "Positive academic attitudes" category among third through fifth grade students with high levels of poverty who were in bilingual programs.

Lindholm-Leary (2001) found that a bilingual program affects students' attitudes toward the classroom environment in a positive way. In the present study, the results for the category "Classroom Environment" in district 1 indicated a change from more negative attitudes to more positive attitudes among Spanish-speaking students enrolled in the Spanish two-way immersion program from kindergarten to first grade. These results indicate that the school program is affecting young students' attitude toward the "Classroom Environment" in district 1. Since there were no statistically significant differences between the treatment and the comparative school, however, the effect of the school program is considered minimal. In district 2, no effect from the school program was observed for students at these same grade levels in the treatment and the comparative schools.

For the category "School Environment", in general, more positive attitude were expressed by Spanish-speaking students enrolled in the Spanish two-way immersion program in district 1 than Spanish-speaking students enrolled in the English-only program. In district

2, changes in attitudes between kindergarten and first grade students enrolled in the Spanish two-way immersion were observed for some of the statements. There were no statistically significant differences, however, between the treatment and the comparative school in either district. For second grade students, no differences were found by school or district. For the category "School Environment", therefore, it cannot be said that the Spanish two-way immersion program is affecting students' attitudes toward the school environment.

In summary, the findings from this study support the hypothesis that Spanish-speaking students enrolled in a Spanish two-way immersion program have more positive attitudes toward languages (English and Spanish) in comparison with students enrolled in English-only programs. It cannot be said, however, that the findings support the hypothesis that Spanish-speaking students enrolled in a Spanish two-way immersion program have more positive attitudes toward school, teachers, and classmates. Factors recommended for further studies include the impact on student attitudes of the socioeconomic status of the school neighborhood and the difference in social class among the students participating in the program.

The results of this study are of interest because, even when Spanish-speaking students live in states that are traditionally White Anglo and English-speaking, such as the states where this study took place, the positive attitudes that the students display could suggest that the future of these students promises an ability to function in the majority society without losing Spanish, their mother language. Because the Spanish-speaking population is the largest minority in this country (Valdés, 2001) and because there is a migration of Spanish-speakers to the Midwest, it is important to recognize that bilingual education for

Spanish-speaking students holds promise. Two-way immersion programs may facilitate a smoother and faster learning of the English language among Spanish-speaking students and integration into the majority culture without the loss of students' own language and culture. Lambert and Tucker (1972) suggest, in fact, that bilingual programs also facilitate openness among the speakers of the minority language and their peers at school.

Nevertheless, there are several limitations to this study that suggest the need for future research. Even though the study was conceived as a longitudinal study, due to the high mobility of the population in both schools with two-way immersion programs, a longitudinal analysis of the data was not feasible because of the small sample size that remained after three years. Considering the sample size, therefore, a cross-sectional statistical analysis was applied and the longest time period considered for student participation was three years in the programs. In this study, third grade students' data were not considered in the analysis due to the extremely small sample sizes. To obtain the strongest results, larger long-term studies are suggested. Finally, these findings cannot be generalized broadly to all two-way immersion settings due to the quasi-experimental nature of the design.

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APPENDIX

Kindergarten and First Grade Students' Attitudes Survey[10]

Name:_____

	1) I am good at my schoolwork.			
	2) I like my classmates.			
	3) My teachers like me.			
	4) My classmates like me.			
	5) I am a good student.			
	6) I like Spanish.			
	7) I like English.			
	8) I like math.			

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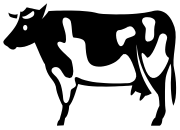
	9) I like reading.			
	10) I like school.			
	11) Going to school is important.			
	12) I feel safe at school.			
	13) I like my teachers.			
	14) Learning to read and write in Spanish is important.			

CHAPTER 3. ATTITUDES OF YOUNG ENGLISH-SPEAKING STUDENTS IN SPANISH TWO-WAY IMMERSION PROGRAMS

A paper to be submitted to *The Modern Language Journal*

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Abstract

In this study, English-speaking students in kindergarten through second grade who were enrolled in two new Spanish two-way immersion programs in two Midwest school districts were assessed to examine their attitudes toward the Spanish and English languages, school, teachers, and classmates. Their attitudes were contrasted with those reported by English-speaking students at the same grade levels who were enrolled in English-only programs in other schools within the same school districts. The findings indicate that English-speaking students enrolled in the Spanish two-way immersion programs report more positive attitudes toward the languages of instruction, English and Spanish, and their classmates and teachers than English-speaking students in the English-only programs, although they do not report more positive attitudes toward school.

These findings suggest that English-speaking students enrolled in a Spanish two-way immersion program feel comfortable in a classroom with Spanish-speaking students, which provides support for Lambert and Cazabon (1994) who theorized that the distance between minority students and majority students could be reduced if they could feel that they are more similar. These findings

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also support Howard and Christian (2002) who proposed that as students gain bilingual skills, they construct positive attitudes toward their classmates who represent another language (Spanish) and culture.

Key Words: Attitudes, Elementary, Two-way Immersion, English-speaking

INTRODUCTION

Intergroup theory proposed by Tajfel, Flament, Billing, and Bundy (1971) established that the simple fact of categorizing people into social groups produces intergroup prejudice. There is evidence that in-group members have less positive attitudes toward members of the out-group than the in-group (Brewer & Brown, 1998). In young children, the simple fact of being part of a group promotes less positive attitudes toward the out-group member (Nesdale, Lawson, Durkin, & Duffy, 2010). Therefore, when majority-language students (English-speaking in the U.S.) share classrooms with minority-language students, there is a risk that students will construct negative attitudes toward each other by the simple fact of belonging to different languages groups. Social theory claims the children's attitudes (intragroup and intergroup) change positively when members of the two groups are viewed in a similar way. In addition, Verkuyten and Thijs (2010) claim that intergroup attitudes can be modified when people are categorized as dual members of both the out-group and the in-group. In other words, if a group of people is categorized as both English-speaking and Spanish-speaking (bilingual) they develop positive attitudes toward both English-speaking and Spanish-speaking, respectively.

Intergroup relationships in young children have not been studied frequently, but it has been reported that intergroup attitudes related to race and gender are expressed by the age of 3 or 4 (Aboud, 1988). Doley and Aboud (1995) found that American children perceive more differences between races than within races. Several researchers concluded that these differences are related to prejudice (Aboud, & Mitchell, 1977; Doyle, & Aboud, 1995; Katz, Sohm, & Zalk, 1975). Negative intergroup attitudes are reported to impact peer relations (DuBois & Hirsh, 1990), helping behavior (Katz, Katz, & Cohen, 1976), and the development of both the academic interests and the skills needed to learn specific subjects, e.g. a second language (Bussey & Bandura, 1992).

Shohamy and Donitsa-Schmidt (1998), clarify that language reflects societal realities as well as social interactions, politics, and economics. Bilingual education is a type of education where the goal is the development of the student's first language along with the development of high levels of proficiency and literacy in a second language (Christian, 2001). Through bilingual education, two groups of students benefit—those whose first language is English and those whose first language is the target language of the program—as all students learn to speak, read and write in both languages (Baker, 2006). Through bilingual education, the distance between the dominant language and the minority language is expected to diminish, resulting in improved intergroup relationships (Christian, 2001). As the two groups representing the two languages of instruction work together in bilingual education, intergroup relationships improve and, according to Cummins (1989) and Lambert and Cazabon (1994), result in the improvement of the value and status of the minority language group. It also has been reported that cooperating on a common goal, as when two

groups represented by the languages of instruction share experiences in the bilingual classroom, is important to the development of successful intergroup relationships (Aronso & Patnoe, 1997; Brewer, & Miller, 1984; Slavin & Cooper, 2000; Schofield, 1995). Bilingual classrooms also facilitate cross-group friendships (Lambert, & Cazabon, 1994). Studies have indicated that that having "out-group friends" predicts having less prejudice and improves one's view of ethnic minority groups (Pettigrew, 1997; Wright, Brody, & Aron, 2005).

Two-way immersion programs are a type of bilingual education in which two language groups share the same classroom. Both the minority language-speaking students (e.g. Spanish-speaking) and the majority language-speaking students (e.g. English-speaking) receive instruction in two languages, the target language (the minority-language, e.g. Spanish) and the majority-language (e.g., English). Each language is used as the language of instruction during half of the school day. Additionally, half of the subject content areas are taught in each language on any given day (Baker, 2006; Barnett, Yarosz, Thomas, Jung, & Blanco, 2007; Valdés, 2001). Young students develop an attitude toward a second language, or even toward their first language, if it is the target language, based on the recognition of the value of that target language in the school setting (Clark, 2000).

The purpose of this article is to examine the attitudes of young English-speaking students who are participating in a Spanish two-way immersion programs. As these students gain bilingual skills, it is expected that they will construct positive attitudes toward their classmates who represent another language (Spanish) and culture (Howard & Christian, 2002).

THEORETICAL FRAMEWORK

Attitudes. Allport (1935) defined that, based on past experiences an "attitude" is the mental state of readiness to respond to some specific object. In education, some studies have focused attention on the attitudes of students, who are learning a second language, toward that language.

Few studies on the attitudes of young English-speaking students who are participating in bilingual education, however, have been found. Among them is a study by Lambert and Tucker (1972) that was carried out in Canada. They studied second through fourth grade English-speaking elementary school students' attitudes toward themselves and their peers who spoke French, which was the target language of the bilingual program. Their attitudes were contrasted with the attitudes of students in a comparative school with no bilingual education. Their findings show that the English-speaking second grade students from the bilingual program had more positive attitudes toward themselves and the other language group than the students from the English-only comparative school. By fourth grade, students from bilingual education had more positive attitudes toward themselves than those from the comparative school, but not toward speakers of French.

Other studies of the attitudes of young students in Spanish bilingual education have shown more favorable attitudes toward being bilingual than monolingual (e.g. Cazabon, Lambert, & Hall, 1993; Lindholm, 1994). Lindholm-Leary and Borsato (2001) also studied attitudes toward the self, school, and others in former students of elementary level Spanish two-way immersion programs who were then in high school. Their findings indicated

positive attitudes toward Spanish language use and school, as well as a desire to not drop out of school. More recently, Wright and Tropp (2005) found that White English-speaking kindergarten through second grade students enrolled in a Spanish bilingual program had more positive attitudes toward Latino students in comparison with their White English-speaking peers enrolled in an English-only program. Recently, Gerena (2010) studied the attitudes of students in a Spanish two-way immersion program toward both the English and the Spanish languages. English and Spanish-speaking students in kindergarten and first grade were the subjects in this study. Findings indicate that English-speaking students reported a more positive attitude toward the English language than the Spanish language. Spanish-speaking students reported less positive attitude toward the Spanish language.

Two-Way Immersion Programs. Bilingual education, also known as dual language education, is education in which the main goal is the development of the students' first language, along with the development of high proficiency and literacy in a second language (Christian, 2001). Two-way immersion is a type of dual language education that incorporates into instruction both the language of minority students and the language of the majority students. It also provides instruction through, and in, two languages (Christian, 1996). In a school day, half of the day the instruction is given in English and the other half, in the target language, Spanish in the case of this particular study (Christian, 1996). In addition, in a two-way immersion program, it is recommended that the student population be represented equally (50/50) by each of the two languages of instruction (Christian, 1996).

The focus of this research study is to examine the attitudes of English-speaking students enrolled in two-way immersion programs toward the Spanish and English

languages, the school environment, and the classroom environment in comparison with the attitudes of English-speaking students enrolled in English-only programs.

PURPOSE

This study is part of a larger research project undertaken by the National K-12 Foreign Language Resource Center (NFLRC) at Iowa State University, in cooperation with the Iowa Department of Education. The research project, funded by the U.S. Department of Education, Office of Postsecondary Education, and Center for International Education (under grant No. P229A060013-07 to Iowa State University), involved collecting longitudinal data from students, parents, teachers, administrators, and school staff, including that of attitudes in response to the Spanish two-way immersion program over a four-year period (2006-2010).

In this research study, the attitudes of English-speaking students enrolled in two Spanish two-way immersion programs in school districts in two states in the Midwest were evaluated and compared with the attitudes of English-speaking students at the same grade levels enrolled in English-only programs in the same school districts. The following research questions were proposed for this study:

3. Do English-speaking kindergarten through second grade students enrolled in a Spanish two-way immersion programs have more positive attitudes toward languages (English and Spanish) than English-speaking kindergarten through second grade students who are enrolled in traditional English-only programs?

4. Do English-speaking kindergarten through second grade students enrolled in a Spanish two-way immersion program demonstrate more positive attitudes toward academic factors, school environment, and classroom environment than English-speaking kindergarten through second grade students enrolled in traditional English-only programs?

METHOD

Research Design. This four-year project was implemented with a quasi-experimental research design. In this context, two school districts from two states in the Midwest agreed to participate in the Spanish two-way immersion project by each naming a "treatment" school where a new Spanish two-way immersion program was being established. In district 1, the two-way immersion program was implemented in the 2006-2007 school year in a newly built, large (700+ students), urban elementary school with high poverty and traditionally low academic achievement. In the other school district in a neighboring Midwest state, district 2, the two-way immersion program was implemented in the 2007-2008 school year in a treatment school that also was a large (700+ students), urban elementary school with students representing a middle class socioeconomic level. The Spanish-speaking students required for this two-way immersion program were bused from another neighborhood in this large urban school district into the school. In both school districts, comparative schools were identified according to the similarity of the school to the treatment school in terms of population demographics such as economic status, type of neighborhood, home languages, and ethnicity. The main difference between each

comparative school and its treatment school was that the comparative school had no two-way immersion program, nor any other world language program.

In each district, bilingual teachers already employed with the school district were reassigned to teach in the two-way immersion program. They were selected to teach content in Spanish while other English-only teachers in the school taught content entirely in English. All two-way immersion teachers taught a mixed group of Spanish-speaking and English-speaking students and shared their two classes of students so that all students received a 50-50% balance of content taught in Spanish and English throughout the school day. The content areas (mathematics, social studies, science, etc.) that each teacher taught varied over time so that all students received each content area both in Spanish and English (although on different topics). This model was continued throughout the grades as the program progressed: one teacher would teach all day, every day in Spanish, and the other teacher would teach similarly in English.

It has been suggested in the literature that for a successful two-way immersion program, half of the total of students participating in the program should speak the target language and the other half should speak the majority language (e.g. Christian, 1996; Cloud, Genesee, & Hamayan, 2000; Lindholm-Leary, 2001). Due to the reality of the situation in district 1, in which there was high mobility in the student population, a 50-50 balance of Spanish-speaking and English-speaking students was not reached as recommended for two-way immersion programs (Christian, 1996). Table 1 clarifies the home language distribution of all students enrolled in the two-way immersion program by district and school year.

The Spanish two-way immersion programs were similar in their philosophy in each district, but their curriculum and the materials used were different. Within each district, the same district curriculum was used by both the treatment and the comparative school, and students in the two-way immersion programs were held to the same standards as other students in the district at their grade level.

Sample. For this study, random sampling and random assignment were not used to identify the treatment and/or comparative student groups. Enrollment in both two-way immersion programs was a voluntary choice made by the students' parents or guardians. All students enrolled in the two-way immersion programs and all students at the same grade levels in the comparative schools were invited to participate in this study. Parents/guardians were asked to sign consent forms, approved by the Iowa State University Institutional Review Board, if they wished their child to be included in the study. In both two-way immersion programs most parents/guardians granted consent for their child to be included. In district 1, because of the high level of poverty, as indicated by the percentage of students receiving free and reduced price lunch (87% in the treatment school and 84% in the comparative school [GreatSchools, 2010]), there was a continuous mobility of families in the neighborhood. The school administrator of the two-way immersion program, unfortunately, did not recognize the importance of keeping a balance of Spanish- and English-speaking students in the classroom. As the program lost students, whether English-speaking or Spanish-speaking, they were replaced by the school administrator with students who spoke Spanish. The mobility of English speakers from the two-way immersion program and the lack of parental consent from Spanish speakers at the comparative school, therefore, resulted

TABLE 1

Home Language of Students Enrolled in the Two-Way Immersion Program by District, Grade Level and School Year

School Year	Grade	Home Language: Spanish	English	Total
District 1				
2006-07	K	23 57.5 %	17 42.5%	40 100.0%
2007-08	K	27 64.3%	15 35.7%	42 100.0%
	1	28 73.7%	10 26.3%	38 100.0%
2008-09	K	29 63.0%	17 37.0%	46 100.0%
	1	22 68.8%	10 31.3%	34 100.0%
	2	24 70.6%	10 29.4%	34 100.0%
2009-10	K	32 71.1%	13 28.9%	45 100.0%
	1	28 65.1%	15 34.9%	43 100.0%
	2	24 75.0%	8 25.0%	32 100.0%
District 2				
2007-08	K	13 41.9%	18 58.1%	31 100.0%
2008-09	K	13 36.1%	23 63.9%	36 100.0%
	1	14 45.2%	17 54.8%	31 100.0%
2009-10	K	18 50.0%	18 50.0%	36 100.0%
	1	11 35.5%	20 64.5%	31 100.0%
	2	15 46.9%	17 53.1%	32 100.0%

in the proportion of Spanish speakers at the treatment schools to exceed the proportion of Spanish speakers in the comparative schools by almost two to one by the final year of the project (2009).

In district 2, by 2009, the sample size of second grade students participating in the same program since kindergarten was very small (only 13 in the treatment school and 5 in the comparative school). This number represents only the students for whom parental/guardian

TABLE 2

Sample Size by District, Grade Level, School Program and Home Language

District	Grade	Sample size	
		Treatment	Comparative
District 1	K	42	79
	weight	1.44	.77
	1	26	49
	weight	1.44	.77
	2	13	26
District 2	K	53	50
	1	30	22
	2	13	5

consent was obtained each year and who had been participating in the same school program since kindergarten (whether in treatment or comparative). The small numbers of students is problematic when considering that it is important in examining student attitudes to use only

students who have been in the program (treatment or comparative) since kindergarten to avoid contamination or bias in their attitudes from other school experiences.

Cross-sectional analysis was used for data analysis and only students who had been in their respective programs (two-way immersion or English-only) since kindergarten were considered for participation in the analysis. Due to the unbalanced sample sizes present in

TABLE 3

Grouping Categories

Attitudes toward languages	Positive academic attitudes	Classroom environment	School environment
I like Spanish.	I am good at my schoolwork.	I like my classmates.	I like school.
I like English.	I am a good student.	My teachers like me.	Going to school is important.
Learning to read and write in Spanish is important.	I like math.	My classmates like me.	I feel safe at school.
	I like reading.	I like my teachers.	

district 1, to obtain results that correctly represent the population of students participating in the study, each sample in district 1 was weighted for the analyses. Table 2 clarifies the sample size obtained for each grade level by district with the weighting used in district 1.

The resulting survey for students in both the treatment and comparative schools consisted of 14 statements (See Appendix A). These statements are categorized as follow: a) Attitude toward languages (statements 6, 7, 14); b) Positive academic attitude (statements 1,

5, 8, 9); c) Classroom environment (statements 2, 3, 4, 13); and d) School environment (statements 10, 11, 12) (see Table 3).

In this study, the grouping of survey statements into categories was made with the purpose of facilitating interpretation. The categories for grouping of the survey questions were adapted from Lindholm-Leary (2001). Cronbach's coefficient alpha shows that in both districts most of the grouping categories had high or acceptable internal consistency or correlation (see Table 4).

TABLE 4

Cronbach's Coefficient Alpha by Category and Grade Level

Category	Grade	Cronbach's Coefficient Alpha	
		District 1	District 2
Attitudes toward languages	K	.38	.44
	1	.49	.59
Positive academic attitudes	K	.28	.52
	1	.72	.44
Classroom environment	K	.65	.68
	1	.73	.56
School environment	K	.60	.67
	1	.80	.55

Student Attitude Survey. The instrument for measuring students' attitudes was adapted from a larger questionnaire used to measure the attitudes of college and high school students who were formerly students in two-way immersion programs. The report of this study was published by Lindholm-Leary and Borsato (2001). The format for the survey used

in this study in kindergarten and first grade came originally from the Center for Applied Linguistic (CAL). It was used with permission by the NFLRC in the IN-VISION project, a five-year federally funded Technology Innovation Challenge grant (Rosenbusch, Villada, & Padgitt, 2003). In addition to including more questions relevant to the project, project staff consulted with a kindergarten teacher at the university laboratory school about how to make the survey easily comprehensible for K-2 students. The teacher suggested placing in the left hand margin, beside the number assigned to each question, a picture, to help students identify the correct line for the question that was being addressed. In the current research project, this same format for the presentation of questions was used and the content of the questions was adapted according to the focus of this research project.

Attitude Survey Administration. Members of the research team administered paper survey assessments each year in both districts in both the treatment and comparative schools. Before beginning the survey, a research team member used a sample question to familiarize students with the process to be used in taking the survey, including clarifying the meaning of the response categories. To assist students in completing the paper survey, since they were not all proficient readers, kindergarten and first grade students were directed by the research team member to: a) "Put your finger on the picture (of the horse)"; b) "Listen carefully to what I (the research team member) read" (The research team member then reads the statement,) and c) "Now color in the face that reflects how you feel." The students were instructed to answer the survey individually and not to copy from their classmates. Second grade students were also provided with sample instructions, but they were asked to read silently and carefully the statements and to mark their answer according to their own

feelings. At this grade level, no pictures were used before each statement, face sizes on the response categories were smaller and under each of the faces the corresponding answer was written: “No,” “Sometimes yes and sometimes no,” and “Yes” (see Figure 1).

FIGURE 1

Survey Sample for Kindergarten and First Grade Compared with Survey Sample for Second Grade

Kindergarten and First Grade

1) I am good at my school work.

Second Grade

1) I am good at my school work.

No

Sometimes yes and sometimes no.

Yes

Data Analysis. Students’ responses to the survey were coded from 1 to 3 (No = 1; Sometimes Yes and Sometimes No = 2; and Yes = 3). Each code number represents a category and the implicit value is an indication of positivity toward the proposed statement in

the survey. Only one out of three possible answers was allowed per statement. Since all statements proposed in the surveys have categorical responses, a Multinomial distribution is assumed for the statistical analysis. The focus of this particular study is to test whether the "school program" (which is either the Spanish two-way immersion program or the English-only program) is affecting English-speaking students' attitudes.

The followed procedures were used for the analysis:

a) The students' responses by districts were analyzed separately since in each district the Spanish two-way immersion programs are similar in their philosophy but different in their execution, such as curriculum and materials. Each treatment school, therefore, was analyzed separately with its respective comparative school.
b) The analysis was made using a cross-sectional data study. In other words, all students for whom consent was received and who were participating in all years of the study from the time they began school were analyzed together, for example, all participating students were analyzed according to their responses as kindergarten students. This same strategy was used for first grade and second grade.
c) Only students participating in their respective programs since kindergarten were considered in the analysis to avoid any bias in the results.
d) Taking into consideration the sample sizes and the distributional assumptions, the following statistical analyzes were used:
    a. For kindergarten and first grade students, a Generalized Linear model with a Multinomial distribution and cumulative logit link function was used with the answers to each statement of the survey as the dependent variable and the school

program (two-way immersion program or English-only program) as the independent variable;

b. Fisher's exact tests were used for the analysis of the responses of second grade students to measure whether the proportion of students responding "Yes" to each one of the statements from both types of programs (two-way immersion and English-only) is statistically different.

RESULTS

Attitudes toward Languages. Table 5 shows the results obtained for both school districts from a generalized linear model for the category of statements, "Attitudes toward languages," which includes the statements: I like Spanish; I like English; and Learning to read and write in Spanish is important (see Table 5).

For the statement "I like Spanish," in district 1, the p-values for both kindergarten (p-value = .01) and first grade students (p-value = .005) indicate that the difference in means of the responses between the treatment school and the comparative school in this district are highly statistically significant (see Table 5). The estimated values reveal that the difference in the means of the levels of agreement expressed by the students is positive (.95 and 1.46), which reveals that more positive responses were given by English-speaking students enrolled in the Spanish two-way immersion program in comparison with English-speaking students enrolled in the English-only program. In district 2, on the other hand, the differences between the treatment and comparative schools for this statement are statistically significant only in first grade (p-value = .004), with more positive responses from the treatment school. In fact,

TABLE 5

Generalized Linear Model (Multinomial Link=Cumulative Logit) Results

for the Statement Category "Attitudes toward Languages" among English-speaking Students

		School program (Treatment school vs. Comparative school)			
		District 1		District 2	
Statement		Estimate	p-value	Estimate	p-value
I like Spanish.	K	.95	.01*	.12	.78
	1	1.46	.005*	1.88	.004*
I like English.	K	.45	.12	1.73	.04*
	1	1.03	.44	1.40	.96
Learning to read and write in Spanish is important.	K	1.00	.07	.38	.34
	1	1.16	.003*	1.72	.01*

*:Statistically significant

the estimated value of the difference for kindergarten (.12) reveals that, even though no statistically significant difference was found at the kindergarten level, more positive responses were observed from English-speaking students enrolled in the Spanish two-way immersion program.

For the statement "I like English" in district 1, no statistically significant differences were found between the mean of the responses given by English-speaking students enrolled in the Spanish two-way immersion program in comparison with English-speaking students in the English-only program in either kindergarten or first grade (see Table 5). In both grades the differences in the response means was positive, but the difference was larger in first grade students (1.03). This finding reveals that more positive responses were given by first grade English-speaking students enrolled in the treatment school than their peers in the comparative

school. In district 2, on the other hand, the p-value = .04 reveals highly statistically significant differences between the mean of the responses given by English-speaking kindergarten students in the treatment school and that of their English-speakers peers in the comparative school. This difference is, on the average, more positive in students enrolled in the treatment school (estimate = 1.73). This condition did not change by first grade since, on the average, more positive responses were still received from English-speaking students in the treatment school (estimate = 1.40) even though the difference with the comparative school English-speaking responses was not statistically significant (p-value = .96).

Finally, in this category, for the statement "Learning to read and write in Spanish is important," marginally significant differences (p-value=.07) were found between the mean of the responses given by English-speaking students enrolled in the Spanish two-way immersion program and the mean of the responses given by the English-speaking students enrolled in the English-only program. The estimated value of the difference (1.00) reveals that the difference is positive. In other words, more positive responses were received from students in the treatment school than the comparative school. In first grade, the p-value (.003) is highly statistically significant. This finding reveals that the differences in the means of the responses given by English-speaking students enrolled in the Spanish two-way immersion program and the means of the responses given by the English-speaking students enrolled in the English-only program were statistically significant. In addition, the estimated value of the difference reveals that the difference is positive and the mean of the responses given by students in the treatment school is 1.16, which is larger than the responses given by students in the comparative school (see Table 5).

Due to the fact that the responses of second grade students were tested statistically using a different methodology because of the small sample size, the results from the Fisher's Exact Test are included in a separate table (see Table 6). For the statement "I like Spanish" the difference in the proportion of second grade English-speaking students agreeing with the statement in the Spanish two-way immersion program and the comparison school in both district 1 and district 2 is not statistically significant. In district 1, no statistically significant differences were found for the statement "I like English." In district 2, however, the difference in the proportion of positive responses to the statement "I like English" in the treatment school was different and statistically significant from the proportion given by English-speaking students in the English-only program. In other words, the proportion of

TABLE 6

Fisher's Exact Test Results for the Statement Category "Attitudes toward Languages" among English-speaking Students

		vs.	
Statement	Grade	District 1 p-value	District 2 p-value
I like Spanish.	2	1.00	.14
I like English.	2	.63	.02*
Learning to read and write in Spanish is important.	2	.01*	<.0001*

*: Statistically significant

positive responses is larger in English-speaking students in the Spanish two-way immersion program than in the English-only program. In both district 1 and district 2, for the statement "Learning to read and write in Spanish is important," the proportion of positive responses from the treatment schools is highly significant, and larger in the treatment schools than in their respective comparative schools. The proportion of positive responses, therefore, is much larger in English-speaking students from schools with Spanish two-way immersion program than Spanish-speaking students from schools with English-only programs.

Positive Academic Attitude. Table 7 shows the results obtained by using a Generalized Linear Model for analyzing the responses for English-speaking students to statements that make up the category "Positive Academic Attitudes".

In district 1, statistically significant differences between the means of the responses given by English-speaking students from the Spanish two-way immersion program in comparison with the mean of the responses given by English-speaking students enrolled in the English-only program were not found for any of the statements. The estimated values, however, do indicate differences. For the statement, "I am good at my schoolwork", a slight negative difference was found between the means. This finding reveals that the mean of the responses given by English-speaking students from the comparative school was .05 larger than the mean of the responses given by English-speaking students from the Spanish two-way immersion program. In first grade, the difference was larger and reveals more negative responses from the treatment school than the comparative school. In district 2, similarly with district 1, results indicate that no significant statistical differences in the means of the

responses were found at any grade level. The means, however, were positive. In other words, more positive responses were received from English-speaking students in the Spanish two-way immersion program than in the comparative school.

TABLE 7

Generalized Linear Models (Multinomial Link = Cumulative Logit) Results

for the Category "Positive Academic Attitudes" among English-speaking Students

		School Program (Treatment School vs. Comparative School)			
		District 1		District 2	
Statement	Grade	Estimate	p-value	Estimate	p-value
I am good at my schoolwork.	K	-.05	.94	.09	.87
	1	-.39	.62	.79	.41
I am a good student.	K	-.47	.42	.17	.76
	1	-.11	.88	.65	.39
I like math.	K	.16	.72	-.97	.03*
	1	.77	.32	-.79	.21
I like reading.	K	.45	.31	-.88	.05*
	1	.84	.19	-.81	.23

*: Statistically significant

For the statement "I am a good student," in district 1, no statistically significant differences were found between the mean of the responses given by English-speaking students enrolled in the Spanish two-way immersion program in comparison with the mean of the responses given by English-speaking students enrolled in the English-only program. Negative numbers in the estimated values of the differences (-.05 for kindergarten and -.39

for first grade) indicate that English-speaking students from the comparative school gave more positive responses (see Table 7). In district 2, however, the estimated values of the differences (.09 for kindergarten and .79 for first grade) indicate that more positive responses were given by English-speaking students enrolled in the Spanish two-way immersion in comparison with the responses given by English-speaking students enrolled in the English-only program. The p-values indicate that these differences are not statistically significant in any of the grades.

In district 1, for the statement, "I like math," no statistically significant differences were found between the mean of the responses given by English-speaking students in the treatment school and the responses given English-speaking students in the comparative school. The estimated values of the differences (.16 for kindergarten and .77 for first grade), however, indicate that kindergarten and first grade English-speaking students enrolled in the Spanish two-way immersion showed more positive attitudes toward the statement (see Table 7). In district 2, on the other hand, significant differences in the means of kindergarten students were found (p-value = .03), and the estimated value of the difference (-.97) reveals that English-speaking students from the English-only program showed more positive attitudes. The same situation was found with the estimated value of the difference for first grade students (-.79). Even though the difference was not statistically significant, English-speaking students enrolled in the Spanish two-way immersion had less positive attitudes toward the statement, "I like math."

Finally, for the statement "I like reading," in district 1, even though the difference in the mean of the responses given by English-speaking students enrolled in the Spanish two-

way immersion program, in comparison with the mean of the responses given by English-speaking students enrolled in the English-only program, was not statistically significant, the estimated values of the differences (.45 for kindergarten and .84 for first grade) indicate more positive responses from the treatment school (see Table 7). In district 2, however, for the

TABLE 8

Fisher's Exact Test Results for the Category "Positive Academic Attitudes"

among English-speaking Students

		vs.	
Statement	Grade	District 1 p-value	District 2 p-value
I am good at my schoolwork.	2	.10	.65
I am a good student.	2	.09	.17
I like math.	2	.74	.91
I like reading.	2	.15	.56

statement "I like reading," the difference in the mean of the responses is statistically significant in kindergarten (p-value = .05). To clarify further, the estimated value of the difference (-.88) reveals more positive responses from English-speaking students enrolled in the English-only program. In first grade, even though the difference in the means of the responses was not statistically significant, the estimated value of the difference (-.81) also reveals more positive responses from English-

No significant differences in the proportion of positive responses were found for any of the statements in the category "Positive Academic Attitudes" for English-speaking second grade students (see Table 8).

Classroom Environment. In district 1, for the statement "I like my classmates", the p-value in kindergarten reveals that the difference (estimated value) in the mean of the responses given by English-speaking students enrolled in the Spanish two-way immersion program is marginally statistically significant (p-value = .06) and is different from the mean of the responses given by English-speaking students enrolled in the English-only program. The estimated value of the difference reveals that the mean in the treatment school (1.13) was larger than the mean in the comparative school. In other words, more positive responses were obtained from English-speaking kindergarten students enrolled in the Spanish two-way immersion program. Even though in first grade the difference in the means was not statistically significant, the estimated value of the difference (1.15) reveals that more positive responses also were found for the treatment school.

In district 2, however, the estimated value of the difference in kindergarten (-.23) reveals that less positive answers resulted from English-speaking students in the Spanish two-way immersion program. In first grade, however, the difference was positive as indicated by the estimated value of the difference (.48). In other words, in first grade, more positive responses resulted from English-speaking students enrolled in the Spanish two-way immersion program. However, the difference in the mean of the responses between the treatment and the comparative school was not statistically significant for either kindergarten grade or first grade (see Table 9).

For the statement “My teachers like me,” no statistically significant differences between the mean of the responses given by English-speaking students enrolled in the Spanish two-way immersion program and the English-speaking students enrolled in the English-only program in district 1 were found for either kindergarten or first grade. The estimated values of the differences, however, indicate that students in the treatment school (1.06 for kindergarten and 1.08 for first grade) gave more positive responses (see Table 9). In district 2, in kindergarten, on the contrary, the estimated value (-.23) reveals that less positive attitudes came from the treatment school in contrast with the responses given in the comparative school. In first grade, however, the estimated value of the difference (.48) indicates more positive attitudes were found in English-speaking students enrolled in the treatment school.

For the statement “My classmates like me,” no statistically significant differences in the mean of the responses given by English-speaking students enrolled in the Spanish two-way immersion program and the mean of the responses given by English-speaking students in the English-only program were found for any of the districts. The estimated value of the differences for district 1 (.50 for kindergarten and -.39 for first grade) and district 2 (.10 for kindergarten and -.90 for first grade), indicate that in both districts, the responses in the treatment school were lower in first grade than in kindergarten (see Table 9).

Finally, for the statement, “I like my teachers”, in kindergarten in district 1, the p-value .04 reveals a statistically significant difference between the mean of the responses given by English-speaking students enrolled in the Spanish two-way immersion program and the mean of the responses given by English-speaking students enrolled in the English-only

TABLE 9

Generalized Linear Models (Multinomial Link=Cumulative Logit) Results

for the Category "Classroom Environment" among English-speaking Students

Statement		School program (Treatment school vs. Comparative school)			
		District 1		District 2	
		Estimate	p-value	Estimate	p-value
I like my classmates.	K	1.13	.06	-.23	.70
	1	1.15	.12	.48	.45
My teachers like me.	K	1.06	.14	-.43	.43
	1	1.08	.29	1.13	.23
My classmates like me.	K	.50	.34	.10	.83
	1	-.39	.53	-.92	.22
I like my teachers.	K	1.47	.04*	-.87	.10
	1	1.07	.29	1.46	.23

*: Statistically significant

programs. The difference is positive, which indicates that students in the treatment school gave more positive responses (see Table 9). Even though in first grade the difference in the means is not statistically significant, the estimated value of the difference reveals more positive responses from the treatment school. In district 2, however, in kindergarten the difference in the means is negative as is the estimated value of the difference. In other words, English-speaking students in the treatment school gave less positive responses. In first grade, however, the situation changed to more positive responses given by English-speaking

students enrolled in the Spanish two-way immersion. In both grades the differences in the means was statistically significant.

No significant differences in the proportion of positive responses were found for any of the statements in the category of "Classroom Environment" for English-speaking second grade students (see Table 10).

TABLE 10

Fisher's Exact Test Results for the Category "Classroom Environment" among English-speaking Students

		vs.	
Statement	Grade	District 1 p-value	District 2 p-value
I like my classmates.	2	.96	.77
My teachers like me.	2	.46	.28
My classmates like me.	2	.72	.68
I like my teachers.	2	.59	1.00

School Environment. In the case of the category "School Environment," for the statement "I like school," no statistically significant differences in the means were found for any of the grade levels in district 1. The estimated value of the differences, however, indicate more positive responses from the treatment school than from the comparative school (see Table 11). In district 2, on the other hand, the difference in the means of the responses given

by English-speaking kindergarten students enrolled in the Spanish two-way immersion program and the means of English-speaking kindergarten students enrolled in the English-only program was statistically significant (p-value = .002). The estimated value of the differences for kindergarten (-1.54) and first grade (-.39), however, were negative, which reveals less positivity in the responses from the treatment school. This same situation is repeated in first grade, even when, in this case, the difference in the means was not statistically significant.

For the statement, "Going to school is important," in district 1, no statistically significant differences were found in either kindergarten or first grade. The estimated value of the differences, however, changes in sign from kindergarten to first grade. In kindergarten, the difference was positive (.37), which reveals that more positive responses were obtained from the treatment school. In first grade, on the contrary, the difference was negative (-.20), which reveals that English-speaking students enrolled in the Spanish two-way immersion program gave less positive responses (see Table 11). In district 2, changes in the sign were also found, but this time, the changes were from negative to positive. Even though the differences in the means of the responses were not statistically significant, in kindergarten the estimated value of the difference was negative (-.59), which reveals less positive attitudes from English-speaking students in the treatment school. In first grade, however, the estimated value of the difference (1.56) was positive, which reveals more positive responses given by English-speaking students enrolled in the Spanish two-way immersion program.

TABLE 11

Generalized Linear Model (Multinomial Link=Cumulative Logit) Results

for the Category "School Environment" among English-speaking Students

		School program (Treatment school vs. Comparative school)			
		District 1		District 2	
Statement	Grade	Estimate	p-value	Estimate	p-value
I like school.	K	.73	.15	-1.54	.002*
	1	.85	.19	-.39	.61
Going to school is	K	.37	.42	-.59	.21
important.	1	-.20	.83	1.56	.20
I feel safe at school.	K	.74	.15	-.16	.75
	1	.13	.85	.06	.92

*: Statistically significant

Finally, for this category, for the statement "I feel safe at school," statistically significant differences between the means of the responses given by English-speaking students enrolled in the Spanish two-way immersion program and the responses given by English-speaking students enrolled in the English-only program were not found in any grade nor in either district (see Table 11). The estimated value of the differences for district 1 (.74 for kindergarten and .13 for first grade) indicate, however, that more positive attitudes were found in the responses given by English-speaking students enrolled in the treatment school than the responses given by English-speaking students enrolled in the comparative school. In district 2, on the other hand, in kindergarten students, the estimated value of the difference (-.16) is negative, indicating more negative responses from English-speaking students enrolled in the Spanish two-way immersion program than in the comparative English-only program.

TABLE 12

Fisher's Exact Test Results for "School Environment" Category

Statement	Grade	*vs.* District 1 p-value	*vs.* District 2 p-value
I like school.	2	.94	.65
Going to school is important.	2	.28	.28
I feel safe at school.	2	.65	.27

The situation changed in first grade, however, with a somewhat more positive attitude reported in the treatment school (estimate = .06).

For second grade students, statistically significant differences for the category "School Environment" were not found (see Table 12).

DISCUSSION

The findings indicate that English-speaking students enrolled in the Spanish two-way immersion program report more positive attitudes toward both languages of instruction, English and Spanish than English-speaking students enrolled in the English-only comparative schools. This result is similar to the findings made by other researchers who have examined the attitudes of English-speaking students enrolled in bilingual programs (Genera, 2010;

Cazabon, Nicoladis, & Lambert, 1998). The importance of this finding is clarified by Oliver and Purdie (1986) who report that to achieve bilingualism, students must have positive attitudes toward both languages of instruction. Toward that end, Lambert and Cazabon (1994) report that bilingual education can increase the perception of similarity between the two languages in the classroom. Additionally, Wright and Bougie (2007) report that when two languages receive equal importance in a classroom, as in bilingual education, the possibility of friendship is enhanced and the dominant group's attitudes toward the minority-language group improve.

In the current study, however, a relationship between positive academic attitudes and the school program was not observed. In other words, English-speaking students enrolled in Spanish two-way immersion programs did not consistently show more positive academic attitudes than English-speaking students enrolled in English-only programs. It is of interest to review in depth the factors related to this situation. In district 1, which is the district with the highest level of poverty (the proportion of students receiving free and reduced price lunch is higher than 84%), the English-speaking students enrolled in the Spanish two-way immersion program reported, on the average, less positive academic attitudes than English-speaking students in the comparative English-only program. In district 2, where the Spanish two-way immersion program was located in a middle class neighborhood, the English-speaking students reported, on the average, more positive academic attitudes. In other words, it is possible that this socioeconomic factor is affecting students' academic attitudes.

The next important finding is that of English-speaking students enrolled in the two-way immersion program, who reported more positive attitudes than their peers in the

English-only program to the statement "I like my classmates." In first grade, however, students reported that they do not feel that their classmates like them. It is theorized by some researchers that having out-group friends will diminish the prejudice and improve the support for minority groups (e.g. Wright *et al*., 2005; Pettigrew, 1997). In addition, it is theorized that the distance between minority students and majority students can be reduced if they feel that they are more similar (Lambert & Cazabon, 1994). With the findings in this study, it could be said that this theory is working for English-speaking students enrolled in a Spanish two-way immersion program: they feel comfortable in a classroom with Spanish-speaking students, but by second grade they do not report feeling accepted by their classmates.

In a Spanish two-way immersion setting, bilingual teachers are hired to teach content in Spanish during the time each day programmed for Spanish. Wright and Tropp (2005) suggest that when teachers use the minority group's language, they help to improve the attitude of the majority group toward that language. In this study, there are no signs that English-speaking students enrolled in a Spanish two-way immersion program feel rejection to or from their teachers. In fact, in both districts, English-speaking students enrolled in the Spanish two-way immersion program reported more positive attitudes toward their teachers (one of which teaches entirely in Spanish) than English-speaking in the English-only program.

In summary, the findings of this study support the hypothesis that English-speaking kindergarten through second grade students enrolled in a Spanish two-way immersion program have more positive attitudes toward both languages of instruction, English and Spanish, in comparison with English-speaking students enrolled in English-only programs.

These findings also support the hypothesis that English-speaking students enrolled in a Spanish two-way immersion have more positive attitudes toward their classmates and teachers. In other words, the findings support positive attitudes in the category of classroom environment. The findings do not support, however, the hypotheses that English-speaking students in two-way immersion programs demonstrate more positive attitudes toward all statements in the category of positive academic attitudes and the school environment.

Limitations of this study that need to be addressed include:

1) Due to the quasi-experimental nature of this study, the findings cannot be generalized to all groups of English-speaking kindergarten through second grade students enrolled in a Spanish two-way immersion program;

2) Due to the high mobility of the population in both schools with two-way immersion programs, a longitudinal analysis of the data was not feasible because of the sample size remaining after three years;

3) Because of the sample size, a cross-sectional statistical analysis was applied and the longest time period considered for student participation was three years in the programs. In this study, third grade students' data were not considered in the analysis due to the extremely small sample sizes. To obtain the strongest results, larger long-term studies are suggested.

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APPENDIX

Kindergarten and First Grade Students' Attitudes Survey.[15]

Name:_____

	1) I am good at my schoolwork.			
	2) I like my classmates.			
	3) My teachers like me.			
	4) My classmates like me.			
	5) I am a good student.			
	6) I like Spanish.			
	7) I like English.			
	8) I like math.			

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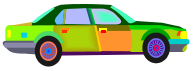
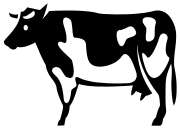
	9) I like reading.			
	10) I like school.			
	11) Going to school is important.			
	12) I feel safe at school.			
	13) I like my teachers.			
	14) Learning to read and write in Spanish is important.			

CHAPTER 4. ATTITUDES OF YOUNG ENGLISH-SPEAKING STUDENTS IN A CHINESE WORLD LANGUAGE PROGRAM

A paper prepared for submission to *Foreign Language Annals*.

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Abstract

The purpose of this study was to examine the attitudes of English-speaking kindergarten through second grade students enrolled in Chinese programs toward the English and Chinese languages, school, teachers, and classmates. Students received Chinese instruction between 60 to 90-minutes per week in two magnet schools in the Midwest. Students' attitudes were compared with the attitudes of English-speaking students enrolled in schools with no world language programs. The findings clarify that young English-speaking students enrolled in Chinese programs report more positive attitudes toward both the Chinese and English languages in comparison with English-speaking students enrolled in schools without world language programs. The students enrolled in the Chinese language world program, however, did not report more positive attitudes toward school, teachers, or classmates.

Key Words: Chinese language, Elementary, World Language Education.

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Introduction

The goal of a world language program is for students to gain the linguistic and cultural knowledge in a second or foreign language (a language other than English in the U.S.), needed to participate in successful communication: "knowing how, when, and why, to say what to whom" (National Standards in Foreign Language Learning Education Project, 2006, p. 11). Currently, approximately 25% of U.S. public and private elementary schools offer world language education (Rhodes & Pufahl, 2009), yet few elementary schools offer programs that teach languages such as Chinese (3%), Japanese (1%), Arabic (1%), Hebrew (1%), or Greek (1%).

As a matter of national security, in 2006 President George W. Bush called for an increase in the number of U.S. citizens able to speak one of the "critical languages" (Robinson, Rivers, & Brecht, 2006; Committee for Economic Development,2006). Critical languages were defined as languages important for national security, and were, in general, the languages less commonly taught in U.S. schools, such as Arabic, Chinese, Japanese, Korean, Russian, and Indic, Persian and Turkic language families (National Security Language Initiative, 2008). Federal funding was made available to encourage schools to add these languages at the elementary school level and to develop students' skills in these languages through long sequences of instruction K-12 (Jackson & Malone, 2009). Awareness of the importance of learning less commonly taught languages grew in the U.S as the importance of these languages to global economic competitiveness was clarified (Committee for Economic Development, 2006). As a result of these initiatives, American citizens have

become more aware of the need to become proficient in other languages and to learn about the cultures where these languages are spoken. By 2011, the National Association of Foreign Student Advisers (NAFSA) reported results from a nationwide poll of 1,000 voters in which 57% reported that they believe it is very essential or moderately essential to provide international education for American children. In their definition of international education, NAFSA includes learning a foreign language, studying abroad, and learning about other cultures (2011). Additional evidence of the impact of this focus on international education and less commonly taught languages is provided by Rhodes and Pufahl (2009) who reported that in 1997 only 0.3% of the elementary schools in the nation had a Chinese foreign language program, but by 2008, the number of U.S. elementary schools teaching Chinese had increased to 3%, an 1,000% increase in a little more than 10 years.

Researchers have examined the impact of elementary school foreign languages programs on students' attitudes for the commonly taught languages and the findings of such studies will be reported in the next section. At this point in time, however, studies on the attitudes of elementary school students learning the less commonly taught languages, such as Chinese, which is the focus of this study, have not been found.

Studies on Attitudes

Allport (1935) defined "attitude" as a mental state of readiness, based on past experiences, that influences behavior toward an object. In education, some studies have focused attention on the attitudes of students, who are learning a second language, toward that language.

Jordan conducted one of the earliest reported studies in second language acquisition in 1941. The main goal of this study was to examine correlations between students' attitudes toward various school subjects, including French, and their corresponding performance in those subjects. This study was conducted in England with students between 11- and 15-years old. No strong correlation was found between students' performance in French and their attitude toward the language, however, this correlation was the strongest one observed between performance and school subjects. Among the most influential research on attitudes were studies conducted by Gardner and Lambert (1959) who examined whether Canadian high school students' attitudes toward French were related with their aptitude to learn the language. They concluded that attitude and aptitude were not related. Among recent studies on attitudes, is one by Sakuragi (2008) who examined American college students enrolled in Chinese, French, Japanese, and Spanish classes. Findings from this study revealed positive relationships between students' attitudes toward languages and their cross-cultural attitudes.

Stanford, Jenckes and Santos (1997) found that Spanish- and English-speaking students in third grade and eighth grade, who were from a lower socioeconomic background, had more positive attitudes toward speakers of a language and toward the Spanish, English and Chinese languages if they had more experience with the language. Heining-Boynton and Haitema (2007), considering the time that students are exposed to the language, reported that elementary school students' attitudes toward learning a foreign language became more negative over time.

The focus of this research project is the study of attitudes toward the Chinese and English languages, school, teachers, and classmates of English-speaking students enrolled in a Chinese world language program in two schools, as compared with English-speaking students enrolled in two schools with no world language program.

Purpose of this Study

The National K-12 Foreign Language Resource Center (NFLRC) at Iowa State University, which was one of 15 Language Resource Centers funded by Title VI International Education of the U.S. Department of Education[19], focused its work during the 2006-2010 grant funding period on researching early world language programs. The NFLRC conducted quasi-experimental, treatment and comparative research to examine English-speaking students' attitudes toward the Chinese language in two schools with non-intensive programs of 60 to 90 minutes/week[20] in kindergarten through Grade 2 (K-2), which served as the treatment group, and compared these attitudes with those reported by kindergarten through second grade students enrolled in a school with no world language program, the comparative group. In collaboration with the Center for Applied Linguistics (CAL), Washington, DC, this project involved the design of standards- and communicative-focused curriculum for teaching Chinese in the early grades (and which was used by the teachers in the two treatment schools) in collaboration with, the NFLRC and with the project Chinese teachers and the project advisors, who were experts in Chinese language education in the

[19] This project was supported with funding from the U.S. Department of Education, Office of Postsecondary Education, and Center for International Education, under grant No. P229A060013-07 to Iowa State University.
[20] All K-2 students in the two treatment schools received 90 minutes/week of Chinese except in the kindergarten in district 1, in which students received 60 minutes/week.

U.S. CAL also provided professional development in the first year of the project for the Chinese teachers in the treatment school programs.

Background and Design of Project

This study is part of a larger research grant project undertaken National K-12 Foreign Language Resource Center (NFLRC) at Iowa State University. This research project involved collecting longitudinal data from students, parents, teachers, administrators, and school staff concerning attitudes in response to the Chinese world language project over a three-year period (2007-2010).

In this research study, the attitudes of English-speaking students enrolled in a Chinese world language program in two school districts in two states in the Midwest were evaluated and compared with the attitudes of English-speaking students at the same grade levels and in the same school districts who were enrolled in schools with no world language program. The following research questions were proposed:

1. Do young English-speaking students who are enrolled in schools with a Chinese world language program demonstrate more positive attitudes toward languages than young English-speaking students who are enrolled in schools with no world language program?
2. Do young English-speaking students participating in a Chinese world language program demonstrate more positive attitudes toward factors such as: languages, school, teachers, and classmates than young English-speaking students enrolled in schools with no world language program?

Research Design

A quasi-experimental research design was implemented for the three-year project. In this context, two Midwest school districts agreed to participate in the Chinese world language project by each naming a "treatment" school where a new Chinese world language would be established. In both districts, the Chinese world language program was first implemented in the 2007-2008 school year. In district 1, the treatment school was a magnet school with more than 700 students. This school had an international focus and, in recent years, had begun a Spanish world language program in recent years. The school was an urban elementary school with a middle-high socioeconomic level (19% of the students received free or reduced price lunch [GreatSchools, 2011])[21]. The second treatment school, in district 2, was also a magnet school in a large, urban elementary school with high levels of poverty (low socioeconomic level) as indicated by the high (45%) free and reduced price lunch count in the school (GreatSchools, 2011). A world language had never before been taught in this treatment school. A school within each of these same two districts that was most similar to the treatment school in population demographics, such as economic status, type of neighborhood, home languages, and ethnicity, was invited to serve as a comparative school for this study. Each comparative school, therefore, was very similar to the treatment school in the same district, except that the comparative schools had no world language program.

The Chinese world language program at both treatment schools began in kindergarten

[21] The socioeconomic level of a school sometimes is defined by the percentage of students receiving free or reduced price lunch. A student can receive a free or reduced price lunch if his/her family is classified in the levels of poverty determined by the Department of Health and Human Services (Federal Education Project, 2011).

at the beginning of the 2007-2008 school year. These schools hired native Chinese-speaking teachers, who were experienced teachers in the U.S. and who both reported that they taught approximately 90% of the time in Chinese. Both teachers used the curriculum designed by the Center for Applied Linguistic in Washington D.C. in collaboration with the NFLRC.

Methodology

In the first year of the project (2007-08), the Chinese world language program began in both kindergarten and first grade in the treatment school in district 1; in district 2 the Chinese world language program began in kindergarten. In both treatment schools a grade level was added to the program every year as the students in the Chinese program moved up to the next grade level.

Involvement in the Chinese world language program was parental choice in the treatment school in district 1 (parents were given a choice of Chinese or Spanish) and was required of all students at grade level in the treatment school in district 2. The Chinese program began with kindergarten in 2009 and continued through K-2 in the 2009-2010 school year in both treatment schools.

For this study no random sampling or random assignment was done in identifying the treatment or comparative groups. The parents of all students enrolled in the Chinese world language program, and the parents of all students at the same grade level(s) at the comparative schools, were invited to have their child participate in this study. Parents were asked annually to sign consent forms, which had been approved by the university Institutional Review Board, to indicate whether they agreed/did not agree to having their

child participate in the study during that school year. Most parents granted consent for their child to be involved. In addition to assessing the students, for whom permission to participate in the study had been received at both the treatment and the comparative schools, with an attitude survey, a variety of other data were collected, including students' ethnicity, gender, home language, year of entry into the school/program, and date of birth.

Unbalanced sample sizes were obtained from both districts, and with the purpose of obtaining results that correctly represent the population of students participating in the study, the samples were weighted. Table 1 reports the sample sizes obtained for each grade level by district with the respective weighting applied.

TABLE 1

Sample Size by District, Grade Level, and School Program

District		Sample size	
	Grade	Treatment	Comparative
District 1	K	112	97
	weight	.93	1.08
	1	67	42
	weight	.81	1.30
	2	37	23
	weight	.81	1.30
District 2	K	151	90
	weight	.80	1.34
	1	95	48
	weight	.75	1.49
	2	40	17
	weight	.71	1.68

Student Attitude Survey

The student attitude questionnaire was adapted from a longer questionnaire published in a research report by Lindholm-Leary and Borsato (2001), which had been used to measure the attitudes of college and high school students who had previously participated in two-way immersion programs. The format of the attitude survey used in this study was based on a design first developed by the Center for Applied Linguistic (CAL) and modified with permission for use in a five-year federally funded Technology Innovation Challenge grant project (Rosenbusch, García Villada, & Padgitt, 2003). Project staff of that study consulted

TABLE 2

Grouping Categories			
Attitudes toward languages	**Positive academic attitudes**	**Classroom environment**	**School environment**
I like Chinese.	I am good at my school work.	I like my classmates.	I like school.
I like English.	I am a good student.	My classroom teacher likes me.	Going to school is important.
Learning to speak Chinese is important	I like math.	My classmates like me.	I feel safe at school.
Learning to read and write in Chinese is important.	I like reading.	I like my classroom teacher.	

with a kindergarten teacher at the university laboratory school about how to make the survey more comprehensible for kindergarten students. The teacher suggested placing in the left

hand margin a picture beside the number assigned to each question. This modification was made with the idea of helping students, who do not yet read, be able to identify the correct line of the statement being read out loud to the students by the survey administrator. In the present research project, this same format for the presentation of the written survey items was used. Additionally, the content of the survey was adapted to address the focus of this study.

The final version of the survey for students in the treatment schools consisted of 18 statements (See Appendix A). Only 15 of the questions were included in the survey used in

TABLE 3

Cronbach's Coefficient Alpha

Category	Grade	Coefficient Alpha
Attitudes toward languages	K	.63
	1	.55
	2	.45
Positive academic attitudes	K	.53
	1	.46
	2	.49
Classroom environment	K	.50
	1	.55
	2	.40
School environment	K	.62
	1	.45
	2	.48

the comparative schools. The statements were categorized as follow: a) attitude toward languages (statements 7, 8, 16, 17); b) positive academic attitude (statements 1, 6, 9, 10); c) classroom environment (statements 2, 3, 5, 14); and d) school environment (statements 11, 12, 13) (see Table 2).

In this study, the grouping of survey statements into categories was made with the purpose of facilitating interpretation. The categories for grouping of the survey items were adapted from Lindholm-Leary (2001). Cronbach's coefficient alpha shows that the grouping categories had high or acceptable internal consistency or correlation (see Table 3).

Attitude Survey Administration.

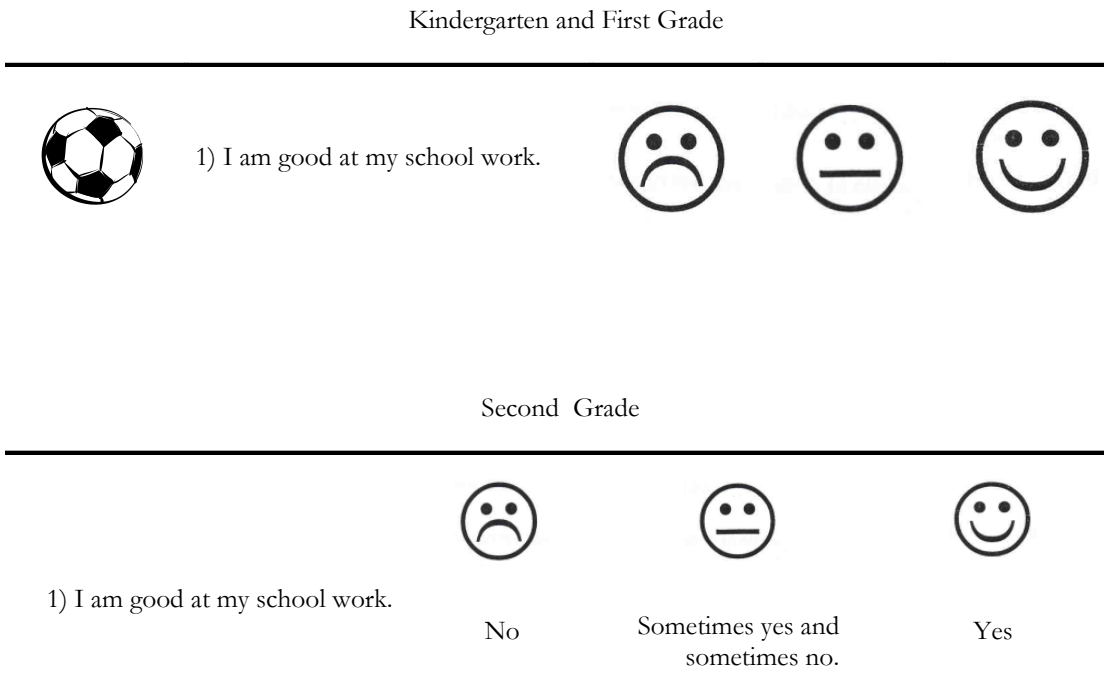
Each year the school district identified a member of the school staff to administer the student attitude survey. The NFLRC research team developed extensive written directions for the survey administrator as well as a DVD, on which a member of the research team gave the directions as if to a group of students to illustrate the strategies to be used in introducing and administering the survey. All students were surveyed in English.

Before beginning the survey, the school staff selected to administer the survey used a sample question to familiarize students with the process to be used in taking the survey and clarified the meaning of the response categories. In helping the students in kindergarten and first grade, who were not yet readers, to answer the paper survey (see Appendix A), the students were directed as follows: a) Put your finger on the picture; b) Listen carefully to what I will read, and c) Color the face that shows how you feel about the statement. The students were instructed to answer the survey individually and not to copy from their classmates. Second grade students were also provided with sample instructions, but they were asked to read silently and carefully the statements and to mark their answer according to their own feelings. At this grade level no pictures were used before each statement, face

sizes on the response categories were smaller, and under each of the faces the corresponding answer was written: “No,” “Sometimes yes and sometimes no,” and “Yes” (see Figure 1).

FIGURE 1

Survey Sample for Kindergarten and First Grade Compared with Survey Sample for Second Grade



Data Analysis.

The responses to the survey were coded from 1 to 3 (No = 1; Sometimes yes and sometimes no = 2; and Yes = 3). Each code number represents the implicit value as an indication of positivity toward the proposed statement in the survey. Only one out of three

possible answers was allowed per statement. Since all statements proposed in the surveys have categorical responses, a Multinomial distribution is assumed as the distribution for each.

The interest of this particular study was to test whether the "school program" (which is either the Chinese world language program or the program with no world language) is affecting English-speaking students' attitudes. In addition, other factors were included in the model to analyze whether these factors, jointly with the school program, are affecting students' attitudes. The additional factor that was considered is: school socioeconomic level (low or middle-high class).

The followed procedures were used for the analysis:

a) The students' responses from both districts were analyzed together since the same Chinese world language program was used in both district 1 and district 2. Even though the Chinese teachers were different by district, the project provided both the same professional development prior to the start of the program and both used the same curriculum and similar materials during instruction. The treatment schools, therefore, were analyzed together as a unit and were contrasted with the comparative schools, which also were analyzed together as a unit.
b) A cross-sectional data analysis was used. In other words, the responses of all students in both district 1 and 2 who had parent/guardian consent, and who were enrolled continuously in the school from the year they began kindergarten, were analyzed together, for example, all participating kindergarten students' responses were analyzed

together without taking into consideration the school year in which they were participating. The same strategy also was used for first grade and second grade.

c) To avoid any bias from other programs in the results, only students participating in their respective programs since kindergarten were considered in the analysis.

d) A generalized linear mixed model with the Multinomial distribution and cumulative logit link function was used with the answers to each statement of the survey for both treatment and comparative schools together as the dependent variable and the school program (Chinese world language program or no world language program), and socioeconomic level of school population (low [district 2] and middle-high [district 1]) as independent variables in the model..

e) The two statements included only in the treatment school surveys are analyzed separately using descriptive analysis and chi-square test.

Results

Attitudes toward Languages.

The following tables report the results obtained for both school districts from a generalized linear mixed model for the "Attitudes toward languages" category of statements, which includes the statements: I like Chinese; I like English; Learning to speak Chinese is important; and Learning to read and write in Chinese is important (see Table 4 and Table 5).

When the factor "Socioeconomic level" is kept constant in the model, the factor "School Program" is interpreted by itself. Therefore, for the statement "I like Chinese," at all

grade levels in the study, English-speaking students enrolled in the Chinese world language program in both districts reported more positive attitudes as the estimated value of the differences indicate (see Table 4). The difference of the means between English-speaking kindergarten students is .24 (estimated value of the difference). This finding indicates that the difference in the means of the responses given by the students enrolled in the Chinese language program in both districts together is .24 larger than the mean of the responses given by the English-speaking students enrolled in

TABLE 4

Generalized Linear Mixed Model (Multinomial Link=Cumulative Logit)
Results for the Statement Category "Attitudes toward Languages"
for English-speaking Students

School Program Factor

		Grade		
Statement		**K**	**1**	**2**
I like Chinese.	Estimate	.24	.42	1.91
	p-value	.20	.08	<.0001*
I like English.	Estimate	.18	.67	-.19
	p-value	.41	.10	.80
Learning to speak Chinese is important.	Estimate	.55	.86	2.16
	p-value	.19	.001*	<.0001*
Learning to read and write in Chinese is important.	Estimate	.35	.69	1.39
	p-value	.20	.001*	.0002*

*: statistically significant

the comparative schools with no world language program in both districts. In first grade the estimated value of the difference (.42) also indicates more positive responses from the treatment schools. In second grade the difference in the means of the responses given by English-speaking students enrolled in the treatment schools is statistically significant and

larger than the mean of the responses reported by their peers in the comparative schools (see Table 4).

For the statement “I like English,” there were no statistically significant differences between the mean of the responses given by English-speaking students enrolled in the Chinese world language program and the mean of the responses given by the English-speaking students enrolled in the school with no world language program. The differences, however, are positive for kindergarten and first grade. This finding indicates that the responses reported by the students in kindergarten and first grade in the treatment school were more positive than the responses given by students from the comparative school (see estimated value of the differences in Table 4). In second grade, on the contrary, since the difference in the means is negative (-.19), the interpretation is that English-speaking students in the comparative schools have slightly more positive attitudes toward the statement “I like English” than do students in the treatment schools (see Table 4).

English-speaking students enrolled in the schools with Chinese world language programs reported more positive attitudes toward the statement “Learning to speak Chinese is important” than students enrolled in the schools with no world language program. For kindergarten students, even though the difference in the means is not statistically significant, the difference is positive, which indicates that, on the average, more positive responses were received from students enrolled in the schools with Chinese world language programs than from students in the comparative schools with no world language program. For students in first and second grade, the differences in the responses were statistically significant. The differences are positive, as the estimated value of the differences indicates that more positive

attitudes were reflected in the responses given by students enrolled in both first and second grades in the schools with the Chinese program than students in the comparative schools with no world language program (see Table 4).

For the statement "Learning to read and write in Chinese is important," statistically significant differences are reported for English-speaking first and second grade students enrolled in the treatment schools. The estimated value of the differences indicates that the difference in the means is positive, as it also is for kindergarten students, although at kindergarten, the findings are not statistically significant (see Table 4). In other words, more positive attitudes were reported by English-speaking students in first and second grade who were enrolled in schools with the Chinese world language program than by English-speaking students enrolled in schools with no world language program.

Table 5 shows the results for the Socioeconomic factor in the generalized linear mixed model. The discussion in this section will focus on the Socioeconomic factor without ignoring that the School Program factor also is in the statistical model.

Similar to the previous analysis, when the School Program factor is kept constant in the model, the results for the Socioeconomic factor are interpreted here. For the statement "I like Chinese," no statistically significant differences were found between the English-speaking students enrolled in the low socioeconomic level school (district 2) in comparison with the English-speaking students enrolled in the middle-high socioeconomic level school (district 1) (see Table 5). The estimated value of the differences indicate, however, that English-speaking kindergarten (-.04) and first grade students (-.03) enrolled in a lower socioeconomic

level school (district 2) reported slightly more positive attitudes toward the statement "I like Chinese" than students in the middle-high socioeconomic level school. In second grade, on the contrary, the differences in the means between the responses given by English-speaking students enrolled in the middle-high socioeconomic level school are slightly higher than the mean of the responses given by English-speaking students enrolled in the lower socioeconomic level school (estimated value of the difference =.30) (see Table 5).

TABLE 5

Generalized Linear Mixed Model (Multinomial Link=Cumulative Logit) Results for the Statement Category "Attitudes toward Languages" for English-speaking Students

Socioeconomic Level Factor

		Grade		
Statement		**K**	**1**	**2**
I like Chinese.	Estimate	-.04	-.03	.30
	p-value	.83	.90	.38
I like English.	Estimate	.25	.68	-1.68
	p-value	.25	.08	.07
Learning to speak Chinese is important.	Estimate	2.87	-1.63	-.90
	p-value	.004*	.48	.79
Learning to read and write in Chinese is important.	Estimate	-.29	-.05	.26
	p-value	.14	.83	.44

*: statistically significant.

To the statement "I like English," no statistically significant differences in the responses given by English-speaking students in either type of school (lower and middle-high socioeconomic level) were found. But, marginally statistically significant differences were found for students (from both types of schools (lower and middle-high socioeconomic level) in first grade (*p*-value=.08) and second grade (*p*-value=.07) (see Table 5). The difference in

the means is positive for English-speaking students in kindergarten and first grade (estimated value of the difference = .68), but in second grade the difference is negative (estimated value of the difference =-1.68). In other words, the mean of the responses given by English-speaking students in second grade enrolled in a low socioeconomic level school is marginally statistically significant and is higher than the mean of the responses given by English-speaking students enrolled in a school classified as middle-high socioeconomic level. In other words, more negative attitudes were found from students from the middle-high socioeconomic level.

For the statement "Learning to speak Chinese is important," only the responses given by English-speaking kindergarten students in the schools with low socioeconomic status indicate statistically significant differences in the means (*p*-value = .004). In first and second grade, the differences are not statistically significant, but both are negative. In other words, less positive attitudes were reported by English-speaking students in first and second grade from the middle-high socioeconomic school level.

To the statement "Learning to read and write in Chinese is important," no statistically significant differences in the means of the responses were found for any grade level. The estimated value of the differences indicates, however, that more positive attitudes were received from second grade English-speaking students enrolled in the middle-high socioeconomic level school.

Positive Academic Attitudes

Keeping constant in the model the "Socioeconomic Level" factor, the results for the "School Program" factor indicate the following: for the statement "I am good at my school work," no statistically significant differences between the mean of the responses given by English-speaking students enrolled in the Chinese program and the mean of the responses given by English-speaking students in the program with no world language were found (see Table 6). The estimated value of the differences indicate that the difference in the means of the responses given by the first (.47) and second grade students (.66) were positive. In other words, on the average, more positive responses were given by English-speaking first and second grade students enrolled in the Chinese world program in comparison with English-speaking students enrolled in program with no world language.

TABLE 6

Generalized Linear Mixed Model (Multinomial Link=Cumulative Logit)
Results for the Statement Category "Positive Academic Attitudes"
for English-speaking Students
School Program Factor

		Grade		
Statement		**K**	**1**	**2**
I am good at my school work.	Estimate	-.06	.47	.66
	p-value	.84	.20	.11
I am a good student.	Estimate	-.35	-.28	-.43
	p-value	.19	.44	.38
I like math.	Estimate	.24	.10	-.29
	p-value	.22	.72	.46
I like reading.	Estimate	-.28	.15	.65
	p-value	.18	.59	.11

*: statistically significant.

For the statement “I am a good student” even though statistically significant differences were not found at any grade, the estimated value of the differences indicate that, on the average, less positive attitudes were reported by English-speaking students enrolled in the Chinese program (see Table 6). Similarly, no statistically significant differences were found between the mean of the responses given by English-speaking students enrolled in the Chinese program and the responses given by English-speaking students in the program with no world language when they responded to the statement “I like math.” As the estimated value of the difference indicates, second graders in schools with no world language program reported slightly less positive attitudes (-.29) toward the statement than students in the Chinese program (see Table 6).

The mean of the responses toward the statement “I like reading” in English-speaking students enrolled in the Chinese world language program did not differ statistically from the mean of the responses given by English-speaking students enrolled in a school with no world language program. The difference in the means was positive in first (.15) and second grade (.65). In other words, more positive responses toward the statement were reported by English-speaking students enrolled in the Chinese world language program than students in the Chinese program (see Table 6).

Keeping the “School Program” factor in the model constant, the following are the results for the “Socioeconomic Level” factor in the model for the category “Positive Academic Attitudes.” For the statement “I am good at my school work” statistically significant differences in the mean of the responses given by English-speaking kindergarten students was found. The estimated value of the difference (-1.39) indicates that students from the

schools with a low socioeconomic level gave, on the average, more positive responses than students from the schools with middle-high socioeconomic level, regardless of whether they were treatment or comparative schools (see Table 7). Even though in first grade the difference in the means was not statistically significant, it also was negative (-.42). In other words, English-speaking first grade students enrolled in the low socioeconomic level gave, on the average, more positive responses to the statement "I am good at my school work" than students from a middle-high socioeconomic school level. In second grade, however, the estimated value of the difference (.26) indicates more negative responses were given by students from the low socioeconomic level school.

TABLE 7

Generalized Linear Mixed Model (Multinomial Link=Cumulative Logit) Results for the Statement Category "Positive Academic Attitudes" for English-speaking Students

Socioeconomic Level Factor

		Grade		
Statement		**K**	**1**	**2**
I am good at my school work.	Estimate	-1.39	-.42	.26
	p-value	<.0001*	.21	.53
I am a good student.	Estimate	-.47	.90	-.26
	p-value	.08	.02*	.60
I like math.	Estimate	.03	-.31	-.80
	p-value	.86	.22	.03*
I like reading.	Estimate	-.50	.54	.33
	p-value	.02*	.05*	.37

*: statistically significant.

For the statement "I am a good student," in kindergarten, marginally statistically significant differences (*p*-value = .08) in the means of the responses were found. The estimated value of the difference indicates that the difference in the means of the responses is

negative (-.47), which clarifies that, on the average, more positive responses were reported by kindergarten students from the low socioeconomic level schools. In first grade, the difference in the means was statistically significant (*p*-value = .02), and the difference in the means is positive (.90), which indicates that, on the average, more negative responses were obtained from students from the low socioeconomic level schools. In second grade, however, the estimated value of the difference indicates that the difference between the students' responses is negative (-.26). This finding, which is not statistically significant, indicates that students from the low socioeconomic level schools reported more positive attitudes toward the statement than students from the middle-high socioeconomic level schools (see Table 7).

To the statement "I like math," statistically significant differences (*p*-value = .03) were found between the means of the responses given by English-speaking second grade students from the low socioeconomic level schools and the means of the responses given by English-speaking second grade students from middle-high socioeconomic level schools. The difference in the means is negative (-.80), which indicates that, on the average, more positive responses were reported by students from the schools with students from the low socioeconomic level (see Table 7).

In kindergarten and first grade, statistically significant differences (*p*-value = .02 and .05, respectively) in the means of the responses were found to the statement "I like reading." In kindergarten the difference was negative (-.50), which indicates that more positive responses were received from English-speaking students enrolled in schools with low socioeconomic level than from English-speaking students enrolled in schools with middle-high socioeconomic levels. In first grade, however, the significant difference came from

more positive responses (.54) received from English-speaking students in schools with middle-high socioeconomic level. Even though no statistically significant differences were found in second grade students, the estimated value of the difference (.33) indicates more positive responses from students in the school with students from the middle-high socioeconomic level schools.

Classroom Environment

Holding constant the second factor in the model, the "Socioeconomic Level" factor, the results for the school program factor in the category "Classroom Environment" are reported in Table 8. For the statement "I like my classmates," the only statistically significant difference (*p*-value = .05) between the means of the responses was found for second grade

TABLE 8

Generalized Linear Mixed Model (Multinomial Link=Cumulative Logit)
Results for the Category "Classroom Environment"
for English-speaking Students
School Program Factor

		Grade		
Statement		**K**	**1**	**2**
I like my classmates.	Estimate	-.33	.17	.95
	p-value	.19	.59	.05*
My classroom teacher likes me.	Estimate	.65	.63	1.13
	p-value	.05*	.15	.12
My classmates like me.	Estimate	.25	.25	.69
	p-value	.28	.38	.08
I like my classroom teacher.	Estimate	.45	.38	AP[(a)]
	p-value	.18	.41	-

*: statistically significant.
(a): No variation in the responses. All responses positives (AP)

students. The estimated value of the difference (.95) indicates that the mean of the responses given by students enrolled in the Chinese program show that students gave more positive responses to this statement. In other words, English-speaking second grade students enrolled in the treatment schools, on the average, reported more positive attitudes toward this statement than English-speaking second grade students enrolled in the programs with no world language. For first grade students, more positive responses (.17) also were found, even though the *p*-value was not statistically significant. In kindergarten, more negative responses (-.33) were reported from the treatment schools with Chinese programs (see Table 8).

For the statement "My classroom teacher likes me," all the estimated value of the differences indicate more positive responses were obtained from the treatment schools. The only significant difference (*p*-value = .05) was reported for kindergarten students, which indicates that there is a statistically significant difference between the mean of the responses given by English-speaking kindergarten students enrolled in the Chinese world language program and the mean of the responses given by English-speaking students enrolled in English-only programs. Similar results were obtained for the statement "My classmates like me," even though the differences in the means were not statistically significant at any grade level. For the statement "I like my classroom teacher," first and second grade students reported more positive responses from the treatment schools with Chinese programs, but in second grade all the response obtained were positive, resulting in no variation in the responses between the treatment schools with a Chinese program and the comparative schools with no world language program.

Holding constant the "School Program" factor in the model, the results for the "Socioeconomic Level" factor are reported in Table 9. In kindergarten and first grade, no statistically significant differences in the means of the responses to the statement "I like my classmates" were found. In second grade, however, the difference in the means is statistically significant (*p*-value .0003). The estimated value of the difference (-1.63) indicates that the difference in the means is negative. In other words, the mean of the responses from English-speaking second grade students from low socioeconomic level schools was larger than the

TABLE 9

Generalized Linear Mixed Model (Multinomial Link=Cumulative Logit)
Results for the Statement Category "Classroom Environment"
for English-speaking Students
Socioeconomic Level Factor

		Grade		
Statement		**K**	**1**	**2**
I like my classmates.	Estimate	.08	.29	-1.63
	p-value	.74	.34	.0003*
My classroom teacher likes me.	Estimate	.28	1.05	.16
	p-value	.36	.02*	.78
My classmates like me.	Estimate	.29	.53	-.16
	p-value	.19	.05*	.67
I like my classroom teacher.	Estimate	.97	1.78	AP[(a)]
	p-value	.01*	.004*	-

*: statistically significant.
(a): No variation in the responses. All responses positives (AP)

mean of the responses reported by second grade students enrolled in middle-high socioeconomic level schools (see Table 9). English-speaking second grade students from low socioeconomic level schools reported more positive attitudes toward the statement "I like my classmates" than English-speaking students from middle-high socioeconomic level schools

For the statement “My classroom teacher likes me,” students from middle-high socioeconomic level schools reported more positive attitudes at every grade level K-2. In first grade, however, the difference in the means of the responses (1.05) was statistically significant (*p*-value = .02), which indicates significantly more positive attitudes in first grade students from middle-high socioeconomic level schools (see Table 9).

For the statement “My classmates like me,” the difference between the means of the responses for first grade students is positive (.53) and statistically significant (*p*-value = .05), indicating more positive attitudes in first grade students from the middle-high socioeconomic level schools. In second grade, on the contrary, the estimated value of the difference (-.16) indicates more positive attitudes from second grade students in low socioeconomic level schools (see Table 9).

For the statement “I like my classroom teacher” the difference between the means of the responses of kindergarten and first grade students from the low socioeconomic level schools and the middle-high socioeconomic level schools were found to be statistically significant. More positive responses, on the average, were reported by students from the schools with a middle-high socioeconomic level. In second grade, all of the responses from all of the schools were positive (see Table 9).

School Environment

Holding constant the "Socioeconomic Level" factor in the model, for the category "School Environment" the results are reported in Table 10. For the statement "I like school" the only statistically significant difference (*p*-value = .02) between the mean of English-speaking students enrolled in the Chinese world language program and the mean of English-speaking students enrolled in schools with no world language program was found in first grade (see Table 10). The positive estimated value of the difference (.63) indicates that the mean of the responses given by first grade students enrolled in the Chinese program is larger than the mean of the responses given by first grade students enrolled in the programs with no

TABLE 10

Generalized Linear Mixed Model (Multinomial Link=Cumulative Logit)
Results for the Statement Category "School Environment"
for English-speaking Students
School Program Factor

		Grade		
Statement		**K**	**1**	**2**
I like school.	Estimate	.24	.63	.45
	p-value	.33	.02*	.26
Going to school is important.	Estimate	.35	.31	-.24
	p-value	.27	.48	.76
I feel safe at school.	Estimate	.22	.30	1.12
	p-value	.35	.31	.01*

*: statistically significant.

world language. In other words, more positive responses were reported by English-speaking first grade students enrolled in the Chinese program. Similar results were obtained for kindergarten and second grade students, even though the differences in the means were not

statistically significant. No statistically significant differences were found at any grade level for the statement "Going to school is important." More negative attitudes toward this statement were reported by second grade students enrolled in Chinese programs than second grade students in schools with no world language program (see Table 10).

For the statement "I feel safe at school," on the contrary, more positive attitudes were found among second grade students enrolled in schools with the Chinese program than second grade students enrolled in schools with no world language program, and the difference in the means was statistically significant (*p*-value= .01) (see Table 10). More positive responses also were reported by kindergarten and first grade students enrolled in the Chinese program although these responses were not statistically significant.

Keeping the "School Program" factor constant in the model, the results in the category "School Environment," for the "Socioeconomic Level" factor are reported in Table 11. For the statement "I like school" no statistically significant differences in the means were found at any grade level. The difference between the means of the responses given by English-speaking kindergarten and first grade students from middle-high socioeconomic level schools and the mean of the responses given by English-speaking kindergarten and first grade students from low socioeconomic level schools is positive. This finding indicates that more positive responses were reported by English-speaking kindergarten and first grade students from middle-high socioeconomic level schools (see Table 11). For second grade English-speaking students, on the contrary, the estimated value of the difference (-.58) indicates that more positive responses were reported from students in low socioeconomic

TABLE 11

Generalized Linear Mixed Model (Multinomial Link=Cumulative Logit) Results for the Statement Category "School Environment" for English-speaking Students

Socioeconomic Level Factor

		Grade		
Statement		**K**	**1**	**2**
I like school.	Estimate	.30	.07	-.58
	p-value	.21	.79	.12
Going to school is important.	Estimate	-.22	-.13	-.62
	p-value	.46	.75	.42
I feel safe at school.	Estimate	.04	.27	-.66
	p-value	.85	.36	.08

*: statistically significant.

level schools in comparison with English-speaking second grade students from middle-high socioeconomic level schools, even though the difference is not statistically significant (see Table 11).

For the statement "Going to school is important," no statistically significant differences were found for any grade level K-2 between the means of the responses given by English-speaking students enrolled in low socioeconomic level schools and those enrolled in middle-high socioeconomic level schools. The differences, however, were all negative. This finding indicates that the responses reported by the students in the middle-high socioeconomic level schools were more negative than for students enrolled in low socioeconomic level schools (see Table 11).

In the case of the statement "I feel safe at school" only second grade students showed marginally statistically significant differences in the means (*p*-value = .08). The estimated

value of that difference (-.66) indicates that English-speaking students enrolled in low socioeconomic level schools reported, on the average, more positive responses than their peers enrolled in middle-high socioeconomic level schools.

Additional Chinese Program Questions

The following two tables (Table 12 and Table 13) report the results for the two treatment schools, treatment school 1 and treatment school 2, to the statements made only for students enrolled in the Chinese programs. Chi-square tests were used to compare similarity in the responses given to the statements of the students from both treatment schools.

Table 12 reports the results for the statement "My Chinese teacher likes me." The responses given by the English-speaking students enrolled in the Chinese world language program are, in general, very positive ("Yes" responses). In kindergarten, most of the responses indicate positive attitudes toward the statement in both treatment school 1 (76.58%) and treatment school 2 (81.33%). In treatment school 2, however, for kindergarten students there also was a high percentage of negative responses (No = 9.33%) in comparison with the responses given by kindergarten students enrolled in treatment school 1 (No = 1.80%) (see Table 12). In treatment school 1, however, there was a high percentage (21.62 %) of kindergarten students reporting "Sometimes yes and sometimes no" to the statement in comparison with treatment school 2 (9.33%). This situation results, at the kindergarten grade level, in the Chi-square test rejecting similitude between the schools' responses (*p*-value = .002). For the other two grades, the responses have a similar pattern in both treatment schools, which results in the Chi-square test *p*-values of .47 for first grade and .89 for second grade students.

TABLE 12

Distribution and Chi-square test to the Statement "My Chinese Teacher Likes Me"

Grade		**No**	**Sometimes yes and sometimes no**	**Yes**	**Total**
		Treatment School 1			
K	Count	2	24	85	111
	Percentage	1.80	21.62	76.58	100
1	Count	3	8	56	67
	Percentage	4.48	11.94	83.58	100
2	Count	0	5	31	36
	Percentage	.00	13.89	86.11	100
		Treatment School 2			
Grade		**No**	**Sometimes yes and sometimes no**	**Yes**	**Total**
K	Count	14	14	122	150
	Percentage	9.33	9.33	81.33	100
1	Count	6	17	71	94
	Percentage	6.38	18.9	75.53	100
2	Count	0	6	34	40
	Percentage	.00	15.00	65.00	100
		Chi-square *p*-value			
K		.002*			
1		.47			
2		.89			

*: statistically significant

Table 13 reports the results to the statement "I like my Chinese Teacher." These results indicate that, in general, in both treatment schools, students have positive attitudes toward this statement as reflected by the high percentage of students in all grades responding

"Yes" to the statement. It should be noted, however, that almost ten percent of the kindergarten students from both treatment school 1 (10.00%) and treatment school 2 (9.27%)

TABLE 13

Distribution and Chi-square test to the Statement "I like my Chinese Teacher"

Treatment School 1					
Grade		**No**	**Sometimes yes and sometimes no**	**Yes**	**Total**
K	Count	11	20	79	110
	Percentage	10.00	18.18	71.82	100
1	Count	1	20	46	67
	Percentage	1.49	29.85	68.66	100
2	Count	0	3	34	37
	Percentage	.00	8.11	91.89	100
Treatment School 2					
Grade		**No**	**Sometimes yes and sometimes no**	**Yes**	**Total**
K	Count	14	22	115	151
	Percentage	9.27	14.57	76.16	100
1	Count	13	20	62	95
	Percentage	13.68	21.05	65.26	100
2	Count	0	8	32	40
	Percentage	.00	20.00	80.00	100
Chi-square *p*-value					
K		.70			
1		.02*			
2		.14			

*: statistically significant

schools did not agree with the statement. In first grade, almost 14% (13.68%) of the students in treatment school 2 reported that they do not agree with the statement. This proportion is

large in comparison with the proportion of students in treatment school 1 reporting no agreement with the statement (1.49%). This situation leads to a rejection of the similarity in the distribution of the responses reported from both schools in grade 1 (Chi-square *p*-value = .02).

Discussion

The findings indicate that English-speaking kindergarten through second grade students enrolled in a Chinese program reported, in general, more positive attitudes toward both the Chinese and English languages in comparison with English-speaking students enrolled in schools with no world language program. This finding coincides somehow with findings made by researchers in studies of commonly taught languages without considering comparative schools (Heining-Boyton & Haitema, 2007; Petrides, 2006; Kennedy, Nelson, Odell, & Austin, 2000; Sung & Padilla, 1998; Donato & Tucker, 1996).

In this study, however, the effect of the school program in which the students were enrolled was further assessed by analyzing another factors that could also affect students' attitudes, the socioeconomic level of the school in which the students were enrolled. This approach was previously suggested by Gardner and Lambert (1959) using other statistical methodology for the analysis. In the present study, the results indicate that, in general, students' attitudes toward the Chinese and English languages were not statistically affected by the socioeconomic factor, even though slightly more positive attitudes were reported by students from schools with a lower socioeconomic level when their attitudes toward Chinese were assessed.

Participation in the Chinese program does not affect whether students report positive academic attitudes (I am good at my school work, I am a good student, I like math, and I like reading) in the grade levels studied (K-2). These academic attitudes, however, were affected by the socioeconomic level of the schools. The data indicate that students from low socioeconomic level schools had more positive attitudes toward some of the statements included in this category than students from middle-high socioeconomic level schools.

Participation in the Chinese program does not affect, in general, either students' attitudes toward the classroom or attitudes toward the school environment. Attitudes toward the school environment, however, were affected by the socioeconomic level of the school. Students from low socioeconomic level schools, in general, reported more positive attitudes toward the statement related to their feeling safe at school. In other words, these students reported feeling safe at school.

In summary, young English-speaking students enrolled in Chinese world language programs demonstrate more positive attitudes toward the Chinese language than young English-speaking students who are in enrolled in schools with no world language program. Additionally, young English-speaking students enrolled in a Chinese world language program demonstrate more positive attitudes toward factors such as teachers, and classmates, than young English-speaking students enrolled in schools with no world language program. Young English-speaking students enrolled in a Chinese world language program do not, however, report more positive attitudes toward school.

Limitations of this study that need to be addressed include: 1. The findings cannot be generalized to all groups of English-speaking kindergarten through second grade students enrolled in Chinese world language programs due to the quasi-experimental nature of this study; 2. Due to the sample size, a cross-sectional statistical analysis was used and the longest time period considered in the analysis was three years of participation in the Chinese world language programs. 3. Larger long-term follow-up studies across additional grade levels are suggested to obtain the strongest results.

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Appendix

Students' Attitudes Survey[22]

Name:_____

	1) I am good at my schoolwork.			
	2) I like my classmates.			
	3) My classroom teacher likes me.			
	4) My Chinese teacher likes me.			
	5) My classmates like me.			
	6) I am a good student.			

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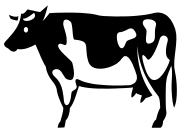
	7) I like Chinese.			
	8) I like English.			
	9) I like math.			
	10) I like reading.			
	11) I like school.			
	12) Going to school is important.			
	13) I feel safe at school.			
	14) I like my classroom teacher			

	15) I like my Chinese teacher.			
	16) Learning to speak Chinese is important.			
	17) Learning to read and write in Chinese is important.			

CHAPTER 5. GENERAL CONCLUSIONS

1. General Discussion

In this study, the attitudes toward languages, school, teachers, and classmates of young kindergarten through second grade students enrolled in schools with languages programs were contrasted with the attitudes reported by young students enrolled in schools with no language programs. This study is part of two larger research projects undertaken by the National K-12 Foreign Language Resource Center (NFLRC)[23] at Iowa State University in cooperation with the Iowa Department of Education, for the Spanish two-way immersion program, and with the Center for Applied Linguistic in Washington D.C., for the Chinese world language program.

In the study of two-way immersion programs, Spanish-speaking and English-speaking students were analyzed separately to answer the research questions. The respective findings from this study are summarized in the following points.

1. Spanish-speaking students in Spanish two-way immersion programs

The findings from this study support the hypothesis that Spanish-speaking students enrolled in a Spanish two-way immersion program do have more positive attitudes toward languages (English and Spanish) in comparison with students enrolled in English-only programs. It cannot be said, however, that the findings support the hypothesis that Spanish-

[23] This project was supported with funding from the U.S. Department of Education, Office of Postsecondary Education, and Center for International Education, under grant No. P229A060013-07 to Iowa State University.

speaking students enrolled in a Spanish two-way immersion program have more positive attitudes towards the school, teachers, nor classmates.

2. English-speaking students in Spanish two-way immersion program

The findings of this study support the hypothesis that English-speaking kindergartens through second grade students enrolled in a Spanish two-way immersion program do have more positive attitudes toward both languages of instruction, English and Spanish, in comparison with English-speaking students enrolled in English-only programs. The findings also support the hypothesis that English-speaking students enrolled in a Spanish two-way immersion have more positive attitudes toward their classmates and teachers. In other words, the findings support positive attitudes in the category of classroom environment. The findings do not support, however, the hypotheses that English-speaking students in two-way immersion programs demonstrate more positive attitudes toward school.

3. English-speaking students in Chinese world language program

The findings of this study support the hypothesis that English-speaking kindergarten through second grade students enrolled in a Chinese world language program have more positive attitudes toward the Chinese language in comparison with English-speaking students enrolled in English-only programs. The findings also support the hypothesis that English-speaking students enrolled in a Chinese world language program have more positive attitudes toward the English language, even though these positive attitudes decline in second grade. The findings also support the hypothesis that English-speaking student in a Chinese world language program report more positive attitudes toward their classmates and classroom

teacher. On the contrary, the findings do not support the hypothesis of more positive attitudes toward school.

Perhaps the most notable finding in this study is the report of more positive attitudes in kindergarten and first grade students enrolled in the language programs studied. Both language groups of students enrolled in Spanish two-way immersion programs reported consistently more positive attitudes. Students in second grade, however, decline in their attitudes toward Spanish. Several past studies in foreign language education (not bilingual) have reported that attitudes declines with age (e.g. Donato & Tucker, 2010; Gardner & Smythe, 1975; Jordan, 1941). In bilingual education, few studies in young students that relate age with attitudes toward languages have been found at this point of time. The most recent study reported by Gerena (2010) reports that the attitudes of Spanish-speaking students toward their own language decline over time.

The findings for English-speaking students enrolled in the two-way immersion programs indicate positive attitudes toward both the English and Spanish languages. In bilingual education, Cortés (2002) found that older English-speaking students in bilingual education have more positive attitudes toward learned target languages than students enrolled in English-only programs had. The importance of this finding is clarified by Oliver and Purdie (1986) who report that to achieve bilingualism, students must have positive attitudes toward both languages of instruction. Toward that end, Lambert and Cazabon (1994) report that bilingual education can increase the perception of similarity between the two languages in the classroom. Additionally, Wright and Bougie (2007) report that when two languages receive equal importance in a classroom, as in bilingual education, the possibility of

friendship between the speakers of the languages is enhanced and the dominant group's attitudes toward the minority-language group improve. MacInture, Dornyei, Clement, and Noels (1998) claim that positive attitudes toward an ethnic group will lead to positive attitudes toward learning the language of that group.

The findings indicate that English-speaking kindergarten through second grade students enrolled in a Chinese program reported, in general, report more positive attitudes toward both the Chinese and English languages in comparison with English-speaking students enrolled in schools with no world language program. This finding coincides with findings made by researchers in studies of commonly taught languages (e.g. Heining-Boyton & Haitema, 2007; Petrides, 2006; Cortés, 2002; Kennedy, Nelson, Odell, & Austin, 2000; Sung & Padilla, 1998; Donato & Tucker, 1996). More research, however, in Chinese world language programs is needed to understand how the attitudes of these students evolve over time.

An additional factor included in this study was the socioeconomic level of the school in which the students were enrolled. In general, the students' attitudes toward the Chinese and English languages were not statistically affected by the socioeconomic level of the school they attended (as defined by the percentage of students receiving free or reduced price lunch), even though slightly more positive attitudes toward Chinese were reported by students from schools with a low socioeconomic level.

In both type of programs, results indicate that both Spanish two-way immersion and Chinese world language, students were developing value in the target language and their

attitudes toward these languages were been constructed positively at an early age. Based on the findings from this research, it appears that the study of another language (Spanish or Chinese) at a young age also results in more positive attitudes toward academic subjects. Follow-up studies are needed to further clarify the impact of language study on young students' attitudes toward languages, school, teachers, and classmates as well as the impact of the socioeconomic level of the students' school.

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